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NEW COMPUTER EXPRESS

First news, first reviews - every week



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PC SHOPPING

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OVER YOUR LIFE - page 38

Is this the best game this year?



First review - page 29

CDI standard: the giants agree

A definitive standard for the much-touted technology of tomorrow - Compact Disk Interactive - has at last been completed.

Philips and Sony, the companies that originated compact disks and CD-ROM, have shipped out their new technology to hardware manufacturers looking to make CDI players as well as to prospective software writers interested in authoring applications for the machine.

It is hoped that CDI will be available in the general public before 1992. When machines appear they will "obviously be at consumer prices".

CDI will play straight into a television and can be operated by mouse, keyboard or remote control. Its main uses will be as apparently sophisticated databases combining text, speech, audio and graphics. Possibilities exist for the machines to run games, although something like word processing is apparently not feasible.

Those hardware manufacturers that already have the rights to original CD technology (i.e. most large electronics companies) will be able to churn out machines for no fee. Others though will have to pay Philips/Sony.

That does not mean launching a machine proper until a software base has developed. Audio CD players of the future will be compatible with CDI software and vice versa.

Philips appears to be confident that the CDI standard will be accepted, giving that CD itself was spared the growing up pains of, say, video.

"This is a completely different product from anything else," commented a Philips spokeswoman. "It combines the personal computer, video and audio player."

£200 machine ups stakes in 16-bit war

SEGA CONSOLE WOWS THE JAPS

Sega's stunning 16-bit console will cost £200 when it goes on sale here next September.

The new machine hit Japanese streets last week and initial batches of tens of thousands sold out within days. Express has had its hands on what is believed to be the only such machine in the UK.

Despite previous talk of direct compatibility with existing Sega cartridges, the new deck will require for this an adaptor costing around £30.

Contrary to false reports elsewhere in the press the machine will be called the Megadrive and not Megadrive. A much touted price point of £140 is clearly wide of the mark.

The machine is being called an 'Arcade and ST' better mainly off the back of its arcade like graphics. Its 64 colour screen has no margin and is capable of enormous sprites. The Megadrive comes with a curious kidney shaped game controller.

And the sound capabilities closely follow those of an arcade machine with three speakers - Programmed Sound Generator, Pulse Code Modulator and FM.

Cartridges will cost between £30 and £35. These currently available in Japan include enhanced versions of *Out Run*, *ArcadeBuster* and *Space Harrier II*. There are no plans for third party development of games. Sega operates a tightly controlled policy which excludes all publishers except those with licenses.

Sega's products are handled here by Virgin/Mastertronic. Boss Nick Alexander told Express: "At best it's very ready a year away and if we do manage to get it out then it'll cost £200. We see it as a trade up in the range. The biggest problem is that Sega are struggling to meet demand



• Megadrive: £200 next September

in Japan." In effect, Sega is concentrating on Japan before addressing the European market.

Alexander added that Sega's president Mr Makynaka had ruled out any sub-£150 price. That said, September is currently a long way off and the whole market may be in a different state come the middle of next year, when a final pricing decision would have to be made.

Another possible delay is the problem of converting the console to the British PAL television standard.

Alexander rebutted the notion that this announcement will damage the existing 8-bit machine. He said they would "sit side by side". "When news first came out of Japan we were not desperately pleased. But when we learned that it was more than twice the price and the fact that it won't be here until September, we were less unhappy," he said.

Come next year 16-bit console shoppers will be given the choice between Sega's machine and Atari's console, which will be half the price.

QL's emulator undercuts PCs!

A PC emulator for the Sinclair QL is to be launched early next year at under £700 turning the machine theoretically into the cheapest of all PCs.

Organized by Digital Precision it will be based with Version 4 of

Microsoft's MS-DOS. The firm is waiting for that to arrive.

Digital is quick to point out that the £120 emulator with a QL will make the machine the cheapest PC compatible on the market.

"It's not going to be

incredibly fast," said boss Freddie Vicks, "because the QL has to pretend it is something else". According to Vicks the software based emulator will be able to handle all PC programs.

More info from Digital Precision on 01527 5429.



● All the best people read *New Computer Express* - and so does Bruce Brookes. The new Radio One rock and blues show featuring our pages for all the latest on his beloved Arrogance and other matters computer-related. Bruce has owned an Arrogance for six months now and uses it to catalogue his CD collection and study other DJ things. Cave items in his computer and he plans to upgrade his accuracy on the machine.

It's the open heart surgery simulator

Just when you thought that every benken idea for a computer game had been used along comes, of all things, a hospital simulator.

California publisher Software Toolworks has come up with the game which enables you to play surgeon. The firm

warns that it involves cutting through "living" flesh and dabbling with organs.

"You make Godlike decisions that determine whether your patient lives or dies," says the blurb. *Toolworrior* Lisa Dickenson denied that the game isn't entirely in

good taste. "Hey, we're not asking people to go around cutting bodies up," she explained from Sherman Oaks in California.

Electronic Arts will probably be publishing *Life and Death* in the UK some time in the new year.



• Life and Death: Godlike!

Atari takes Stacey laptop in hand



• Gleadon: Possible case delay

Job cuts hit Mediagenic

More evidence of problems for United States software houses emerged last week with Mediagenic laying off 36 of its staff.

The firm is hitting the cutoff as a signpost of the more heavy industry in the States. Computer games and toys in general are suffering from Mediagenic. The news comes quick on the heels of disappointing financial results posted earlier in the month. Second quarter profits slipped from \$1.5 million to \$200,000.

The personnel laid off in California represented 11 per cent of the company's staff worldwide. Other US companies experiencing problems include Mindframe, which posted a quarterly loss of \$180,000, and EA, which had to close down its Japanese office (page 3).

UK boss Bob Gleadon said "We just posted profits but thought it would be prudent to carry this off. The entire financial market is depressed in the States. This makes our consolidation. He stressed that while Mediagenic is a exporting out from the UK as a well receiving.

Atari's designers and technical experience have been given the task of completing the CYOD ST laptop Stacey by March.

Although the circuit board is up and running, the casing has yet even to be agreed upon. At Commodore two weeks ago a polystyrene model was on display but that is said to be some way off the desired final result.

One problem is the tracker ball which has been drafted in to replace a mouse. Current thinking puts the ball in the right hand corner of the machine - this though would cause problems for that 15 per cent of the population which is left handed.

Speaking at the Atari Show last Friday the firm's boss Bob Gleadon told Express: "There's the possibility of a delay because we haven't got the casing yet but the circuit board is ready. All the problems will be ironed out by the international launch at Hannover in March."

Atari is also working on the possibility of expanding power capabilities. Stacey is currently battery powered only, with a life of six hours. However, it is being suggested that an Amstrad PPC solution be brought on - that of running the machine off a car cigarette lighter. "We're also looking at different standards for the battery cells," offered technical direc-

Stacey tech spec

Price: £595

Launch: International unveiling at the Hannover Messe in March. It should be in the UK later in the spring.

Driver: 3.5 inch floppy - exactly the same as the ST

Screen: 640 x 640 LCD panel super-twist

Memory: 1Mbyte of RAM

Weight: 'About the same as the 1040ST'

Power: Battery power, possibly car cigarette lighter and mains power supply.

tor Les Playes.

"The case itself is being designed by Jan Vellendijk who is responsible for all the ST range's cases. He's a perfectionist," added Playes. He estimated that Stacey would weigh roughly the same as a 1040's main unit.

Amstrad: made in UK

Amstrad is planning to switch much of its manufacturing operations from the Far East to Britain.

Alan Stacey's firm has saved extraordinary amounts of money in the past by sourcing product from the Orient where labour is a good deal cheaper. The competition for Western manufacturing contracts is so fierce that prices of parts have sometimes verged on the ridiculous cheap.

However, Stacey is looking to hire British sub-contractors to build his machines - particularly his new business range. Amstrad is currently negotiating with new telecommunications machine GPT. If the contract is won GPT could be responsible for up to 20 per cent of all PC386s.

It will represent the first time Amstrad computers have been manufactured in the UK. Amstrad machines being made in the UK was widely criticised as little as 18 months ago when the suggestion was first cooked.

easily thinking of buying one for personal use.

The sale did not include some 45,000 businessmen looking to buy a machine over the next twelve months.

Next year's event runs from September 27th to October 1st. (That's quite enough facts - ed).



• PCs '88: It figures

PC SHOW 88: Who went and why

Factual breaks and on. Here are all the squally bits and bolts to emerge from the PC Show which occurred all that time ago. Well, September at any rate.

It would appear that there were 99,000 visitors of whom 36 per cent made a beeline for the leisure hall and were interested only in what goodies were lurking behind the mammoth stands. A far less, 34 per cent, headed for the sober business hall and kept a good distance from the gaming fraternity.

Gleadon will realize that the other 30 per cent were there to soak up the lot and floated around all the halls.

More than 30 per cent of the visitors didn't have a computer and were seri-

Shoot from the Lip...

the week's most quotable sayings

"Now banter: that's the principle. We've absolutely pruned ourselves right the way back so that we can flower again."

Chris Lee Clement "Greenfingers" Chambers on the right way to save a company.

"Yes, last year we said it would take two years for us to make a big impact on the PC market. But now you have to

start those two years from this October because that's when we had proper availability of machines."

An exercise in moving the goalposts courtesy of Sanyo's John Coburn.

"After I've finished Flight Night, I'll either start up a software development house or buy an ice cream van." Programmer Steve Bak getting his plans on ice - either way.

Training blues

According to training firm Computech companies using micro complain that their biggest recruitment problem is finding computer literate personnel. Yet 20 per cent of those companies don't even train their own staff.

And of those that do, 40 per cent only take in one or two trainees.

Computech runs a series of training courses aimed at solving the computer literacy problem.

NEW COMPUTER EXPRESS

OUR OPINION

Computer firms: console yourselves

Even by the standards of the hype-dominated computer market, the new Sega console rally is quite extraordinary. We've been lucky enough to get our hands on one and our exclusive report begins on page 8. Judge for yourself the quality of the graphics. Better than the Amiga is an understatement - particularly when you see these graphics in action.

The true sadness is that it won't be on sale until next September at the absolute earliest. For that, blame the excessive demand from the Japanese. (You could also try lobbying Virgin Mastertronic, though that's unlikely to have much effect.) But when it comes, just what will it mean for the keyboard-based games machines?

One view says that the Sega Megadrive will simply wipe the floor with their 16-bit competitors - to say nothing of their offerings on those old dinosaurs the Spectrum and MSX. If people only want to play games, then give them a gamey video game. But it isn't quite that simple. Even if the main motivation is games, most people still hope that their machines can do something more than just beat aliens to oblivion. Certainly that's true when it comes to parents, who still nurture beliefs that computers are "useful" for their kids.

For sure the new Sega will do exceptionally well. But its success will be more like the Amstrad Effect, where a new market is created in addition to - rather than as a replacement for - the existing one. Reports of the death of keyboard games computing have, as ever, been greatly exaggerated.

Simply dishonest

Legal niceties prevent us from commenting in detail upon the row that has broken out between Marshall and Commodore over (see page 8). All that we can say is that Express has a clear policy of not being directly critical of a pre-production version of a new title without pointing out that it is incomplete.

Other publications - and we're not talking about C&E - appear willing to dress up any pre-release version as a full release, so that they can trumpet having an exclusive. Such practices are quite simply dishonest. Ultimately, they're no good for the punter, no good for the software house and in the end - God willing - no good for the magazines concerned.

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KIDS ADDICTED TO NAZI HORROR GAMES

West German computer addicts are playing disturbing Nazi games which include anti-semitic references in a sick new craze sweeping the country.

The illegal disks are being circulated by underground Nazi groups and picked up by home computer users.

The games include on-screen skeletons, and players are urged to conquer the world for the Aryan race and destroy homosexuals, Gypsies and ecologists.

Many two-related games produced here and in the US are banned from Germany, including combat simulations from the likes of MicroProse. But the Nazi titles are being produced in Germany itself and the Government is having difficulties cracking down on distributors.

Parents are being urged to keep an eye on what their children are playing. The games are being dated specifically at the 12 to 16 year old age group and are apparently the height of fascist amongst young computer freaks.

Two games have been singled out as being particularly offensive. Clowen US-Germany urges gamers to

to kill enemies of the state to the sound of Deutschland über Alles. And The Aryan Test requires taking an exam. Disgustingly, players are graded from being a "washed Jew"

to an SS officer.

This is happening in a climate of increasing violence on West German streets against immigrants and a surge in Nazi activity.

Multi-nationals panic at computer fraud surge

Large financial institutions are investing larger and larger amounts of money into protecting their PCs as the threat from computer fraudsters and hackers grows ever more.

Last week, multi-national financier Merrill Lynch spent the first \$200,000 of a potential \$1 million investment on securing its network of PCs. The firm, like many sensitive institutions, has been reviewing its security systems recently and has found them wanting.

One security industry source told Express that Government defence and intelligence agencies are experiencing a new surge in panic as more bizarre stories of computer fraud and hacking come to light. Many reason that for

every plan which is foiled, there take many more which remain undetected until it is too late, if at all.

"You don't hear about this because companies and agencies don't want their security plans known," comments Louis Oley of security firm Microsys. "But there has been widespread analysis over the past two years within firms like Merrill Lynch. They are prepared to spend a million because it potentially saves many times that."

Beth is Merrill Lynch's angst about being caught answers that it has bought a substantial stake in Microsys. Thus, the unusual step of revealing security details was taken.

Anco boos again

Page three bimbo Maria Whitaker has once again popped up in a computer game.

This time Anco, purveyor of the squalid Strip Peter series, has signed up the buxom beauty. Anco, ST and PC owners will soon be able to try their hand against the tabloid's starlet.

Express is informed that the climax of the game - called Maria's Christmas Box - involves a G-string.

Whitaker was the centre of a cleverly misinterpreted paranoiac storm of disapproval when she appeared in ads promoting Peleco's Barbarian game. At the time, at least one publication decided to cover up her most revealing assets.



• Whitaker: Computer starlet

Art for Arc's sake

Clarens Micro Supplies has just released its ProArtisan graphics package for the Archimedes.

ProArtisan - the sequel to Artisan - works in Mode 1.5 and is claimed to make full use of the 256 available colours.

Besides sporting all the usual facilities provided by top-end home graphics packages, ProArtisan features graduated fill manipulation, true cut and paste sprite scaling as well as Bezier curves for freehand drawing and anti-aliasing.

ProArtisan's package's most powerful feature is its ability to degenerate full screens, as complete sprites and distort it into a sprite in less than two seconds. This kind of manipulation,

Plus, the ability to compress screen files by up to 40 per cent, is being paraded by Clarens as a good reason to attract those in the Archie brigade with £169.95 to square. Tel: 0506 495511.

• ProArtisan: Manipulation



For 2 points: Does this face look anything like Ian Botham?

A little problem with Emily Hughes had soft-wash house Kite in a mad panic last week as it attempted to get A Question of Sport out onto the streets.

The game is a month late and last-minute changes have meant that three other games Sports Warrior, Windziner and Superstar went to out

until some time next year.

The problem with A Question of Sport arose when squabbling panelist Emily Hughes was replaced by Ian Botham in the TV game show. Kite had to gain Botham's permission to use his likeness in computer form and then had to replace the digitized Hughes. Sundry bugs have also

been cropping up.

"We had to get a freeze like this out before Christmas and so the other games have had to wait. The people have been waiting on-step to get it out," said Klaus Jil Blach.

Question of Sport was due for release in October. Kite now plans for all computer versions to be



• Hughes: Title headache available from this week-end.

GAMES TOP TWENTY FULL PRICE

1	Double Dragon	170	
2	Double Dragon	165.00	
3	Double Dragon	165.00	
4	Double Dragon	165.00	
5	Double Dragon	165.00	
6	Double Dragon	165.00	
7	Double Dragon	165.00	
8	Double Dragon	165.00	
9	Double Dragon	165.00	
10	Double Dragon	165.00	
11	Double Dragon	165.00	
12	Double Dragon	165.00	
13	Double Dragon	165.00	
14	Double Dragon	165.00	
15	Double Dragon	165.00	
16	Double Dragon	165.00	
17	Double Dragon	165.00	
18	Double Dragon	165.00	
19	Double Dragon	165.00	
20	Double Dragon	165.00	

GAMES TOP TEN BUDGET

1	Joe Blade 2	16.95
2	Born Jack	16.95
3	Commando	16.95
4	Footballer Of The Year	16.95
5	Advanced Pinball Simulator	16.95
6	Combat Lynx	16.95
7	International Rugby Simulator	16.95
8	Short Bike Simulator	16.95
9	Kick Start 2	16.95
10	End Zone	16.95

COMPILATED BY GAIL LIP

MS: Commodore 64, ST, PC; SE: Atari 2600, Intellivision, MSX; SN: SNES; TG: TurboGrafx-16; VM: Sega Master System, Sega Game Gear; FM: Famicom, NES; PS: PlayStation; CD: CD-ROM; 32: 32-bit; 16: 16-bit; 8: 8-bit; 4: 4-bit; 2: 2-bit; 1: 1-bit.

Atari's mega bucks trauma

Atari continues to be dogged by the bad performance of its chain of American shops called Federated.

Though computer sales are increasing Federated is losing the company nearly \$1 million a month. Atari - owned by Commodore's former boss Jack Tramiel - made a profit of only \$980,000 for the three months up to the beginning of October. That is down 91 per cent on the corresponding period in 1987. Such a shortfall is likely to hamper Atari's ambitious plans across the board for competing next year.

In contrast, arch rival Commodore is enjoying profit increases of 88 per cent brought about by moves up market and internal re-organisation.

Sales of Atari computers increased by 30 per cent during the period, although even better profits were down 28 per cent. Atari, once again, blamed D-Ram prices and shortages for "negatively impacting" profits.

FURIOUS MARTECH TAKES MAG TO COURT



• Martin: Sick as a pig

An angry legal battle has broken out between games publisher Martech and the magazine Commodore User. The row could have a knock-on effect on the way magazines review software.

Martech is fed up because Commodore User has stated its new game *Phantom Fighter* - allegedly without reviewing a completed version. The software house says it only sent editor Mike Patterson a pre-production demo for preview purposes. The firm claims that this fact was stressed to Patterson.

Last week Martech took the magazine to the High Court in The Strand with the aim of obtaining an injunction to prevent distribution of the magazine. The judge was said to have been sympathetic but due to

the extraordinary costs of putting a mag the injunction was refused. Martech is now set to sue CU's publishers EMAP.

"We're as sick as pigs about this," raged Martech boss David Martin. "It's a fundamental breach of trust that you have to have with the magazines. The game was clearly a demo. When they asked if it was reviewable we told them it wasn't. "I can only guess that Mr Patterson was trying to be clever. We won't be submitting anything to Commodore User while he is an editor."

He went on: "This will have relevance to every software house that needs our demo to magazines. We need to feel comfortable about sending them things out." He added that *Phantom Fighter* has been received

well by all other magazines including CU's sister paper The One, which reviewed the completed version. Aspects of the game which Patterson had scored, said Martin, had been noted on.

What his upset Martin went more is that the game was programmed by an "inexperienced" team. Released, which he set up in consultation with the Irish Government. This was Emerald's first venture and we wanted to show everyone what a great game it is. They will be extremely angry with this."

Patterson point blank refused to comment on the matter indeed, EMAP as a whole is currently preferring to remain tight lipped.

Kids' mega GCSE trauma

Young ST owners hoping for a good blast-out as a Christmas present could be in for a nasty surprise from educational software house Adamski.

The firm is about to let home GCSE *Algebra Maths* in the hope that parents will consider it a more valuable use for the machine their offspring are spending so much time on. Adamski takes it as read that students themselves won't be taking out for the £25 program.

"It's difficult to get youngsters to use educational programs instead of playing games," observed boss David Tomlinson. "But the parents will buy them."

The program was written by a teacher, and Adamski reckons it'll give students a better chance of passing their GCSE Maths exam come the autumn. More details on 0796 524304.

Amstrad climbing

The Financial Times may have brought a smile to Sir Alan Sugar's normally stern face last week.

In the esteemed publication's annual Top 500 *Nugget* firm computer chart, the Amstrad unit had moved up from number 213 to 170, in the process taking over such notable names as Heinicke and Bole Rye.

However, a look up to the highly heated reveal that Europe's number one computer company is still Olivetti at 81. Despite a slip from number 68.

Dixons doing the business



• Dixons: Seating the builders?

High street chain store Dixons has opened up its first business computers only store in Leicester.

The multiple retailer hopes serious businessmen have hitherto been served badly when it comes to electronic office equipment. The business centre stocks everything from the PS/2 range to a desktop fax machine.

And the firm claims that it will be installing staff who know what they're talking about. The high street computer stores in general are notorious for bungling sales assistants. Dixons personnel promise to pay customers visits when problems occur. Other business stores are set to follow.



• Painted a jaw-breaking and terribly modern adventure. Completion has been launched for the Mac with a price tag of £24.95. It's also available on the Amstrad at £24.95. Amstrad can be contacted on 01-631 5170.



• Care Electronics is launching this "sophisticated" screen dump program for the ST at £26.

Featuring a jump a whole screen, take a small part of it, or rapidly or reduce specific parts of the screen. The firm says it'll produce good prints on even the most complex game. The demo works on Spanish-compatible printers. More info on 0823 672032.

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shopping days to go...

The last thing most sane people want to start thinking about now is Christmas 1988. But the software houses already have their eye on the games which might be taking up into the next decade. Activision's UK subsidiary Red Software recognises its firm is in a unique position with *Powerdrome*. Among the biggest classic, its target will be Ocean with *Crash* in Q.

Snippets

Refreshing ribbons

For those people who doubt buying a new game ribbon every couple of months causes *fatigue*.

The 386 arsenal will, according to Caspell Corporate Services, change an old faded ribbon into a sparkling new shiny one. And it can perform this feat faster and easier again.

Money for old sticks

Joysticks aren't the most resilient of creatures, as any gamer will tell you - and replacing them can be a costly business.

With this in mind Lehigh-based Redbook Designs has come up with a scheme to revolutionise that nagging. The company will take in any faulty stick and immediately replace it with a fully working model. Then, it will take apart the broken joystick, fiddle around and turn it into working models to send on to the next customer.

"We've got most models in stock and we'll send a fixed joystick the day we get a broken one through," explained managing director Keith Prokhoruk. "We got the idea because the son of the boss kept breaking his joystick and it was costing a fortune." The cost of reconditioning your stick is £4.50. More info on 0462 450723.

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TIMES HAVE CHANGED...

But the problems haven't

There was a time when all you needed to create the right impression was a good typewriter. Times have changed since Jim got his Home Portable, but the problems are still the same. From multi-national companies to the local squash club, everyone wants their printed material to be the best.

Until now Jim wouldn't have had much choice. He could do the job himself on his trusty Home Portable - or his word processor - or put the work out to a design studio and have it typeset. And he'd pay the price - with low quality or high costs.

Now there's a new choice. One that gives you the quality you'd expect from a studio, at a price less than some people might pay for a word processor! Timeworks Desktop Publisher turns your PC and printer into an instant electronic print shop.

What's even better is the unique blend of publishing power, versatility, and ease of understanding that Timeworks Desktop Publisher gives you. And there's a Guided Tour tutorial to get you up and running in under an hour!

No need for sophisticated hardware either. Timeworks Desktop Publisher works equally well on a 512k twin floppy PC with a 9-pin matrix printer, or the latest 386 PC or PS/2 driving a Postscript laser printer. So you don't need to throw your software away when you upgrade your system.

Jim would have loved Timeworks Desktop Publisher. Isn't it just what you've been waiting for?

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- Top quality printout on matrix or laser printers.
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- Import text from leading word processors including 1st Word Plus, WordStar, Word Perfect and Microsoft Word, plus ASCII files.
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- Typesetting functions include kerning and leading.
- Paragraph tags allow you to repeat styles easily.
- Style sheets for standard page layouts.
- Left and right hand master pages.
- Automatic hyphenation.
- Bulleted paragraphs.

"To my mind its ease of operation and flexibility probably make this the most powerful DTP package around".

Claire McQuarrie, Amstrad Professional Computing, September 1988

"The software supports all the major features offered by Ventura, plus a few more... Timeworks DTP seems to represent remarkable value for money".

Desktop Publishing, March 1988

GST

SOFTWARE PRODUCTS LIMITED

Timeworks Desktop PUBLISHER

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SCORE

First pictures and exclusive review of Sega's sensational

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New Computer Express has laid its hands on the **Sega Megadrive**, Japan's first new-wave console. Games freak **TONY TAKOUSHI** was there at the airport to collect the courier's carry-all, and brought it down to our offices for the first hands-on test in Europe. **ANDY STORER** helped him unpack.

Take
a look
at this
soft-
ware!

Three
screens
from
Space
Harrier 2
show what
the
Megadrive
can do.



In Tokyo, the initial production run of the world's first 16-bit console sold out in a matter of days. After two years of project development, Sega Corporation has beaten the likes of Matsushita and NEC to present the cartridge-crazy Japanese market with this designer-chic console not much bigger than a portable CD player.

You can hook up the matt-black Megadrive to your TV via its aerial lead and play state of the art arcade action games from your armchair, listening to its digital quality sound through your hi-fi or headphones. It'll take existing 8-bit format Sega cartridges but only after you've paid £20 or so for an adaptor.

The console deck contains of a cartridge port mounted on a thin spiral cut dome under which is housed the hardware. Bottom left are switches for power on/off, headphones/line output volume and RAM reset. Underneath these is a compartment intended for unspecified future expansion - whilst round the back are power input and A/V output along with an extension port. It's also open to speculation what this may be intended for, but it looks like there are enough lines on the interface to support a keyboard, lightgun or 3D glasses. Along the front is a stereo headphone jack and two joystick ports to take the smooth, two-hand joystick control devices - one of which comes bundled.

The lightweight joypad features an eight-way, button-press movement controller on one side with a start/pause button immediately above

OUTRAGE!

16-bit console

a back of three fire buttons on the other. Control is extremely responsive and the hand-set designed to fit snugly into the palms.

All you'd really need to go fully overboard would be a manual jock input to connect it to a track and, because once you're up and running the world outside stops.

Space Harrier 2 looked more than stunning - we were left wondering how such massive full-length screen sprites could be shifted at ultra high-speeds without any discernible loss in the velocity of other animated objects. Even though RF leads, animation was flicker free.

These impressive visuals aside, the feature which knocked us out the most was the perspective change when the flying character rises into the sky. The ground falls away beneath you and the horizon drops accordingly to give you a true per-

spective viewpoint. It sounds simple enough, but try getting any other 16-bit computer to handle that information without stalling on speed. Until the uncharted areas of the Amiga hardware are more extensively explored, you won't. The Sega Megadrive is straight out of the future.

Expected to come in at nearly £200 when it hits the UK, it'll probably still sell by the bucket next Christmas - and judging by the Japanese reaction and the quality of the Space Harrier 2 cartridge we saw, it'll be a winner worldwide too. ■

How much and where?

Sega's UK distributor, Virgin Mastertronic says the Megadrive will arrive in the UK next September and sell for around £200.

If you can't wait that long and fancy being the coolest dude on any block outside Japan, you can pick up the Sega Megadrive for only £85 in Tokyo. The return sailors' about a grand thought.

The games cartridges sell for £25 in Japan - at the moment there's only Space Harrier 2 and Super Thunderblade available, but enhanced versions of Afterburner and Outrun are shortly to be released. By the time the games wing their way over here they'll probably cost you £30-£35.

The works

Driven by a 64000 central processor running at 8 MHz tied in with a 4 MHz 280 and a huge customised video chip, the Sega Megadrive pumps out a palette of 512 colour, RGB quality graphics. With 64K of Video RAM, loading the screen with 64 colours at any one time, and FM stereo output, you have a deck able to deliver all the audio-visual speed and power of an Amiga and more.



The competition lines up

By next summer, the console war will have really heated up. Here are the machines the new Sega will be up against.

Nintendo 8-bit System

- **Standard Model £129.95**
Console, two game controllers, TV connector, Super Mario Brothers Cartridge game.
- **Deluxe Model £189.95**
Console, ROB (Robotic Operated Buddy) robot, light gun, two game controllers, TV connector, two Cartridge games.

• **Software**
Cartridge Around £25
Wide range of games software available in Japan, but only a limited number are released in UK.

- **Visuals**
Resolution 256 x 240
Palette 52
Display TV Only
- **Audio**
Sound channels 3
Stereo No

Sega 8-bit System

- **Master System £79.95**
Console, two game controllers, TV connector, Hang-on Smart Card game.
- **Master System Plus £99.95**
Console, Light Phaser, two game controllers, TV connector, Safari Hunt Cartridge game, Hang-on Smart Card game.

• **Super System £129.95**
Console, 3D glasses, Light Phaser, two game controllers, TV connector, Missile Defence Cartridge game.

- **Software**
Cartridge £19.95/£22.95/
£24.95/£29.95
Smart Card £14.95
Good selection of games available, usually the best 8-bit conversions of Sega's arcade coin-op games such as Out Run, Afterburner and Wonder Boy.

- **Visuals**
Resolution 256 x 192
Palette 54
Display TV only
- **Audio**
Sound channels 3
Stereo No

Atari System

- **Atari 2600 VCS £49.99**
Console, joystick, TV connector, 5 cartridge games.
- **Software**
Cartridge £10 - £20
Probably has the widest range of con-

sole games available, although many games are starting to show their age (most of them produced in 1979-1983). Fortunately a few games are still produced on it - like Epyx's Summer Games, Winter Games and California Games.

- **Visuals**
Resolution 160 x 192
Palette 16
Display TV Only
- **Audio**
Sound channels 3
Stereo No

NEC PC Engine

Not officially available in the UK, although some retailers are importing RGB monitor versions over here for about £175. No details from NEC themselves as yet.

- **Software**
Cartridge £25-£30
Only a few games available in Japan at the moment, but they include an incredibly accurate conversion of Irem's arcade coin-op R-Type.

- **Visuals**
Resolution 320 x 256
Palette 512
Display TV or Monitor
- **Audio**
Sound channels 6
Stereo No

Konix Console

Due to be launched early 1989, priced around £150. Reported to be a 16-bit console with better speed and audio-visuals than the Amiga. Will come with a three inch double-sided disk drive, but will also include the usual cartridge option.

Atari ST Console

Due to be launched sometime in 1989, priced at £99. Will come without keyboard or disk drive, and will run games software using cartridge format (so ST games are currently available on cartridge).

Amiga Console

Commodore is believed to be launching a console based on the Amiga - no details are currently available.

Nintendo 16-bit console

Nintendo is reported to be working on a 16-bit console, but again there are no other details available.

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ST, AMIGA OUT NOW

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HIPOFF! The savage war against copy-cat software

With Mediagenic's R-Type vying for the crown of the most successful shoot-'em-up, ROD COUSENS talks to Express about GOLD GAMBIT's claim that the legal action taken against the game is insane.

EXPRESS: Given that there are so many similar games around, how can you stop people ripping games off? How can you judge a case of 'look and feel'? Where do you draw the line?

COUSENS: You're legislating to something that is in controversy. We can look at two similar games and make a defence for one by pointing out the differences. That's what makes it difficult - but you bloody well know that can't be done. It's been done in other industries but there have been studies forward and progress as been made.

But isn't ripping off simply the unfortunate wages of talent and originality?

Yes. But you can be a lot more receptive to copying if you've been awarded in the first instance. But if you haven't then you become bitter and twisted.

By stopping games from getting to market aren't you limiting people's choice?

No. It means better choice. Our action against US Gold involved Geoff Brown picking up the telephone and explaining. He regretted it and I think he would admit that. He took the view that Gold, like Activision, Ocean, Telestrat, and everyone, have to go out and secure business and have to defend them as an individual or by joining with other

publishers.

People want R-Type because it's an arcade action. It means something to have the title which ultimately you're paying for. I don't think that the consumer suffers in any shape or form. In fact, I think they're spoiled for choice.

What if a small software house had come up with a game similar to R-Type? It wouldn't have been able to fight any action brought about by you for fear of going bankrupt?



• Rod Cousens: 'The value is the original'

There is an argument that says the big companies can use the legal system to their advantage in as much as they can check money at it. But there is also the view that smaller companies are afforded better protection because the judges are conscious of this. If you bring an injunction against a small publisher just for the hell of it that may work against you because you may leave yourself open to a claim for damages. The larger you are the bigger claim you're exposed to.

Is copyright and the question of 'look and feel' is ignored while in the long term damage to games software?

You have to forget the software publishers. It's the programmers' livelihood you have to look at. You may take more money programming but the thought process may have taken three years. You've produced that work of art only to see it blatantly ripped off under a legal system which, as yet, has been clear. It denies you a livelihood and that's very unreasonable.

You've come up with the most innovative design as the world only to see it ripped off a month later. All that work you've put in and someone along and changes it because they can always improve something after the event. The value is the original but if that happens to you, you'll say 'well that's what you go off and do something else'.

That upsets the industry of the talent which we depend on. This is where words and that's why we need it defined then. There are lots of good programmers who can get a rise to live job or IBM but they choose not to because they're creative. But if you're not careful they'll just walk away.

In this industry, which is so creative, we have to defend talent and give it resources. Some did walk in off the street with some game. You stick it in and lead it up and you say 'wow'. We need to encourage and protect that. Otherwise, why participate in the software industry?

You've obviously drawn the battle lines and Katakis stepped over them. But where are they?

The battle lines are dictated by financial cost. There is a little point in

as going to court to lose. There has to be a case for it in the eyes of the judge. This can't be done lightly because the legal system won't allow it.

What about the argument that it's too hard to police because there are only basically seven games in the world anyway?

No. Because if you jump into a car it has to have a chance. A game has to have a better foundation. You build something on that which is different from anything else. That's what makes it original and exciting. When you develop a game you're bound to a basic, say, sideways scrolling. But the theme and concept is entirely different.

Is companies are going to start attacking each other in an ongoing 'look and feel' war? There will be similarities? And won't it become a forum in which to settle old scores? That could be said but litigation is a very costly exercise. Those that want to fight personal battles by way of scoring righteousness through litigation should see that it makes little sense. You must avoid litigation at any cost. That can only be a last resort if there's a breakdown in communications. I don't want to see people going hell bent into court because I don't think it will happen.

What is 'look and feel'?

Software houses have severe problems in arguing that one of their products has been copied. The alleged clone will have been produced by different programmers and the program code may well be totally different. So the argument boils down to saying that the 'look and feel' of the clone is very similar to the original. This is where the difficulties begin. It is very hard to define 'look and feel' and there is no clear dividing line between the ripping off of an idea and the developing of an established theme. The courts, in time, will have to decide.

So what is the answer?

People should talk to each other because there is little to gain from litigation unless you're a lawyer. The two sides should talk. We would pick up the phone and say 'hey, that's enough'.

I did it to Talamon. In my view the originality of Armabite is questionable. I wasn't looking for an argument. I just told them to make sure the game wasn't like R-Type or I may have been forced to do something. They assumed that it was different enough and accepted that. We don't want to be facing each other across a courtroom being represented by lawyers. •

The curious case of R-Type and Katakis

Activision had licensed the coin-op hit R-Type and tabled it for a pre-Christmas launch. Cousens then found out that US Gold was planning a similar style game for release. In October, Activision swooped on US Gold in late September and demanded that Katakis be buried immediately. Gold, with a legal gun at its head, complied. Katakis was never launched. It has been suggested that Cousens left his attack until the last opportunity in order to inflict the most damage on its rival.

COUSENS: That is absolutely not true. Neither Geoff Brown nor US Gold's boss nor myself need to conduct a campaign or vendetta. We're big enough to phone each other to prevent further cloning. In a word: His apparent non-response about Katakis though was that he was on holiday and so when he came back he was faced with legal action. And that may be.

But we acted before Katakis was published. If we'd waited and then issued a writ the Geoff Brown's damages would have been even more substantial. We knew that Katakis existed and we looked at it at the first opportunity.

The nub of the argument

If you're planning to buy R-Type ask yourself these two questions:

- 1) Given that Katakis and R-Type are palpably similar (some would have called them the same game) would you buy both?
 - 2) If you had bought Gold's Katakis in September would you be buying R-Type over the next few weeks?
- Cousens reckons that if Katakis had hit the streets at least 20,000 partners would have answered the 10 billion questions. If so, he reasons, Activision would have been deprived of £80,000.

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EXPRESS MAIL

EAGER FOR AMIGA

I am rather disappointed if your choice of the Atari (then again, the ST as your best buy for this Christmas, I would like to point out that even though the Commodore Amiga costs more, the capabilities make the small extra cost well worth it.

For example, the Amiga has dedicated chips for sound and graphics and has a better blitter chip. The ST may be more useful for MIDI applications but the overall quality of sound, without the use of MIDI, is comparable to that of an Amstrad or BBC. On the other hand, the Amiga sound chip's output can be likened to that of a high ranking synthesiser.

The graphics capability of the ST is to say the least sparse, whereas the Amiga is capable of much higher quality graphics (eg. the use of Amiga graphics in TV programmes including Network 7).

From the above evidence I conclude that though the cost of the Amiga is slightly greater, the overall quality of the machine more than makes up for any material misgivings.

I thus rest my case.

Andrew McIlm, Colchester, Essex

✓ You make some fair points - there's no question the Amiga is an excellent machine. But a major reason we made the choice we did is that the Amiga's technical superiority over the ST is not being fully exploited by software houses.

The risk in buying the Amiga is that you're paying an additional £100 for a "small extra cost" for facilities which you may rarely get the benefit of. It's the quality of available software which determines the value of a machine for most people.

Having said that, there's evidence of a big improvement in Amiga software support this autumn.

NOT SO EAGER FOR AMIGA

I congratulate you on having the courage to make a definitive recommendation of a wise buy for Christmas.

I agree with your choice, even though I have an Amiga 1000. The ST Super Pack at £299, less discounts available, is an excellent buy. I am going to buy a 1040STFM with free business software in the New Year.

I think there is a consensus of your very fair comparisons, it is that genuine bargains in Amiga productivity software are now becoming available. And on the ST there is still a lot of development going on in the business area.

For example, The Disk Company has upgraded Kind Words to include an English spelling checker plus thesaurus - still at £50 for the Amiga! And US software publisher Snow-High has recently opened in London. It sells cheap Amiga programs.

Michael Kingston, Littlehampton, Bristol

✓ Neither machine seems to have a lead in the business market. The Amiga has the advantage of US software, the ST has the lead in European packages. Let the debate continue.

BORING LETTERS PAGES

Recommending the Atari ST indicates a bias towards same and instantly will annoy Amiga users, promoting the endless stream of "my computer's better than yours" letters waiting to be totally boring letters page.

L. Winterton, Harrogate

✓ Good point. Let the debate and here.

MAIL ORDER DISORDER

I regret I have to inform you of the dangers of ordering software with credit cards. I often order software on my parents' credit cards (with their permission). On November 1989 I got my turn to order via Popcorn for my first order time. The recipient would not tell my mum how much she was going to debit the credit card. My mum hung up and we ordered elsewhere, but the recipient could have charged us £50 and said that she had made a mistake.

By the way, I think my mag is "barked".

Nicholas Cresswell, East Cowes, Isle of Wight

✓ It's true mail order can be an outstanding business. Choose the wrong product from the wrong company, and you can find yourself locked into a long-term battle of letters and phonecalls.

But that's the exception. The vast majority of mail order firms fulfil their function successfully on the vast majority of occasions. If you apply common sense when ordering - only choose those with full postal addresses, return companies which have been around for some time, ascertain exactly how much your credit card will be debited etc etc - then there should be no problems.

Whatever, if you're having difficulties, then apply us with details and we'll try to sort them out.

HOWARD FISHER HOWARD FISHER HOWARD FISHER HOWARD FISHER HOWARD FISHER

In your review of eight low cost word processors you included LocoScript 2 for the Amstrad PCW 5512, but omitted to mention that it is available for the PCW 8256 and RS12 at only £24.95 for £34.90 (including LocoScript).

Your criticism of the lack of word counter is completely false. LocoScript (included as standard on the 5512) contains a word counter for all or part of a document.

Howard Fisher, Locomotive Software, Dorking, Surrey

PS Why is there no Macintosh column in New Computer Express? After all, you use them to put the magazine together. PPS Memo to Chris Andersen. There was a totally sufficient number of mentions of me in issue 2.

✓ It's true about the word-counter in LocoScript, but it would be more convenient to have one included in the main program. And you're right to say that there should have been mention of the sales LocoScript 2 package (which though that DEFENDIT doesn't have a word-counter). We only left it out so that the name Howard Fisher would have to appear again in this issue.

Mac's by the topic of the argument, we should also have a column on coffee, alcohol, cigarettes etc - all of which are major aids to putting our mags together.

Dear Reader

We proudly present the liveliest, timeliest computer forum in Britain. Write to us about anything to do with computing - just so long as your letters are interesting or angry or opinionated or entertaining or, failing that, short. The week's most impressive episode wins a mystery prize - we try to make it appropriate for the person concerned. Write to:

Express Mail, 4 Queen Street, Bath, Avon BA1 1EJ

Yours in anticipation,

The Express Editorial Gang

PS. Our replies are prefaced by a tick unless we wholly disagree with what you say. Then you get a cross (and get cross).

PPS. Sorry, folks, no personal replies. We'll print it or bin it.

THANKS FOR THE MEMOTECH

The Richard Roben of computers has got to be the Memotech. It compares to looking at software that a special hardware addition was available - known as a "Speculator" - which enabled it to run a few specified Spectrum games - mostly rubbish.

In retail case made it heavy and so a wonderful doorstop.

Please send me my mystery prize of a Commodore Amiga immediately.

Don Griffith, London W6

✓ Your special mystery prize is winging its way to you forthwith. Congratulations it's a Memotech!

Actually, it isn't. And to be honest, you haven't won the mystery prize in any case. If I were you, I'd never buy Express again after the way we've just been treated.

Howard Fisher, Locomotive Software, Dorking, Surrey

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But with music and art, it's different. For example, nearly all if not all music programs are written so people can write their own music. Many people don't have the time or patience to do this, but would love to hear music on their computers.

Software houses could easily program music to come out of the computers at an excellent performance for a cheap price. They could even do start records and have graphics to complement the music.

If brilliant games can be programmed, then surely music and graphics can be. Albums can be sold on disks and tapes.

Also, groups may only just started to have all their music published as starts. Why can't this be in another form or media?

Jason Kelsall, Rotherham, Yorkshire

✓ Fundamentally, the idea appears flawed. If you want music merely to be played to you, then conventional methods are far better and far cheaper.

Why computers? Why lose the advantage of computers being interactive?

Howard Fisher, Locomotive Software, Dorking, Surrey

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• Many people would love to hear music on their computers

● WHAT YOU THINK OF US

SHEER UNALLOYED ENTHUSIASM

I bought your magazine reluctantly, as in the past I have accumulated a vast pile of computer-related mags that started off in the right direction. But as time passed, they not only graduated into mere pages of games reviews, but increased in price regularly until they reached what seems to be a standard price for this type of publication, at £1.95.

Moreover, the standard of the format and layout deteriorated greatly. The adverts were incorrect, page numbers to articles were the wrong ones and pages that contained adverts were not numbered so that it is difficult to find a specified page. So I decided to cease taking the pockets of greedily bought unprinted publications.

Another criticism is the quality of spelling and grammar of all publications in the present day. When I am no longer a scholar I left school at 14 years, I can read and write with reasonable accuracy. I would expect that a publication out for sale to the public could attain a reasonable standard of the English language, without the many mistakes found in all the printed matter one attempts to read today.

So, having rapidly purchased your first and second issue, I

offer you these comments in the hope that they will not fall on barren soil. Should the present style and price of your mag stay stable, or indeed with the excitement of 8000+ to buy it. The bull as it were, is now in your court. To conclude, I wish you every success, and predict that if you follow the above guidelines, the resulting increase in your circulation will be assured.

Robin Lunning, Hull

✓ Congratulations - you have won this week's Mystery Prize. We were going to send you a free subscription to Express, but you might well regard that as a ploy from an unprincipled publisher. Instead, we'll send you a sub for one of our mags, to show you just how bad life can really be.

No doubt we've taken foul of many of your outcrops already. All we can say is sorry. Sorry yet. 014440 44241 (Ext 404) (Cont page 57)

MY TYPE

I think that New Computer Express is far better than the others. I have only one complaint: there was far too much space wasted on the B Type review.

Neil McEwan, Gosle

✓ This is about now we've got more complaints than that

BULLETIN CALL

I must compliment you on the standard of New Computer Express. Future Publishing is keeping its standards level with the excellence of 8000+. Could I make a suggestion? Why don't you have a regular page devoted to bulletin boards and suchlike? I am sure your readers will appreciate it as much as I would.

Andrew Long, London E8

QUESTIONNAIRE BITS

Here are a few comments and suggestions from the hundreds of questionnaires replies you've sent us:

✓ Less about Alan Sugar. No - nothing about Alan Sugar.

✓ How about enlarging the wordings?

✓ Keep the print size the same.

✓ The Astonishing Felice from the High Street in your buyer's guide was really funny. Try having similar articles in future.

✓ Introduce a Business/ Graphics section for a slightly serious section.

✓ Like the beginners section.

✓ I don't think you need to improve it - for the price, you've got the balance right.

✓ It's good to see the QL once. Despite Amstrad, the QL

refuses to let down and de and it still knows spots of more other computers.

✓ More in-depth games reviews for 16-bit machines.

✓ Less games. There is plenty of mindless drudgery already for people with negative IQs.

✓ Apart from a slightly over the approach which is humorous.

✓ I first but it looks to become winning eventually. I congratulate you as a well presented and interesting magazine.

✓ I enjoyed the outcrops in the new section and the 'Huge Springs External in P550'.

✓ The article on PC Graphics was a splendid example of good journalism.

✓ Keep things simple. Don't be excessively negative.

✓ Really go to town on software reviews (or consistently bring out weird/violent games).

✓ Less news type stories.

✓ Expand your news coverage. It's great.

✓ I think you have a winter cod I don't make my pocket rack there.

✓ Thanks for an excellent value for money weekly - far better than the competition.

● SPOT THE LINK

MSKING

Well, there's no link to be found here, but we've got a page for you to write in. We'll be happy to publish your letter, and we'll be happy to publish your letter, and we'll be happy to publish your letter.

✓ We'll be happy to publish your letter, and we'll be happy to publish your letter, and we'll be happy to publish your letter.

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20-190s, 190s, etc. Both your weekly competitors have such a feature.

Advertising may be a minority interest, but it is a dedicated minority interest and we have always been surprised at the number of readers who use our magazines and only read the regular advertising pages.

✓ An "at-a-glance" listing of all new releases and conversions would be very handy and time-saving.

NU Master, The Adventurers Club, London NW2

✓ There's no reason for Express to increase its cover price, rest assured. It will only represent quite an extraordinary bargain, but that doesn't mean that we have to waste the money.

One of the reasons for running the questionnaire folder week was to find out what we're lacking and it is more than reasonable that an advertiser could just make an appearance. Other things have happened like the loss of an advertising company.

Conceding an order for a mag with an advertising column in favour of one without.

The games listing is currently being discussed, for a time, purely to satisfy its audience. It needs to be extensive both in scope and in content. The trouble with the latter is that it is not unknown for software houses to encounter the occasional local difficulty in getting

garnet out on time.

SIZE ISN'T EVERYTHING

Over the past few years there has been one thing that has puzzled me more than anything else: the 3 inch disk drive. Am I alone in that?

Amstrad surely introduced it after the introduction of the 3.5" drive. Why? This format's format suffered from availability problems and costs double that of 3.5" disks.

Now you announce that Kone will be using a 3" drive in their console (Express 2). Again, why? It seems incredibly stupid to fill an inch in space really that valuable! It's dying to know why they've done it, but it's beyond me.

It also be interested in any news of the ST Plus. The flat (parallel) bus seems buzzing with various prices and technical specs and a required release date of Feb 1st '89, priced at £399.

Finally, I would like to congratulate you on producing two fine issues. I have long been disenchanted with your competition, and hope you maintain your quality. Just increase the news, letters and keep the best depending to a decent level.

Peter Baldwin, Maidenhead, Berks

✓ Don't give you how always to remember about this market is that Amstrad is widely a law unto itself and see Philips' ST's running series for further proof.

✓ The conventional view is that the firm is little more than a follower where others lead - none of Japanese in

philosophy than European. Yet there's more to it than that, and it's called economics. Amstrad's use of 3" drives on the PCW was scarcely conventional likewise with CP/M, but that's another story. But because the 3" standard had failed, Amstrad was able to buy up a huge number of these drives at a rock bottom price (probably less than £10 each). This meant good news for the price of the finished computers: less good for the cost of the disk.

Nonetheless, running 3" drives for the Spectrum +3 had more to do with the drive's overcapacity than it did with any intrinsic regard for the user. It still appears to have been a fundamental mistake, however.

As for Kone, the firm is in the uncomfortable position of not being able to comment publicly on its forthcoming new brochure. Express's exclusive notwithstanding. Analysis of disk size is thus a little difficult. All will be revealed in the new year.

As for Honda's ST Plus, the worldwide exclusive details of its existence, spec, and planned prices were first unearthed by a character who now works for Express. First assumed that those quarters will mean that Express will be first with the news about the Plus. Some pointers: don't hold your breath for February 1st; yes, it's planned to be £399 - with the ordinary STs probably dropping to £299 (banded) and £199 (standard). It'll have 4,096 colours and both vertical and sideways scrolling; and

✓ Nature Angles also.

Finally, there's yes we do not want to keep the disk advertising at a decent level. That's why we employ an advertising department. ■

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PC16400	Mono	Colour	EGC
DD	£599	£739	£859
10Mb	£699	£849	£969
30Mb	£729	£879	£999
40Mb	£809	£959	£1079
64Mb	£829	£1079	£1199

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£400. Mouse, MS-DOS 3.2, GW-BASIC, Gem, GemWrite, Mouse etc.

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AUTUMN SPECIALS

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Supercalc 3.1
£39

Timeworks Lite DTP Only
£39

Citizen 120D
£119

NEC P2200 + SheetFeeder
£299

3 1/2" Disk Drive
£85

5 1/4" Disk Drive (inc Amstrad fitting kit)
£69

Integrated 7 +
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25 Floppies
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Telephone for details.

Carriage £10 for first item,
for others, UK orders
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AKHTER As Supplied to Open University and DTI

PC1000 640K, 3 expansion slots, DOS 3.3 GW Basic, RS232 & parallel
PC100 Small Footprint. Same price as PC1000.

Mono EGA

DD	£599	£859
20Mb	£699	£969
32Mb	£729	£999
40Mb	£809	£1079
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THE PC SHOPPING NIGHTMARE

You can avoid it with this exclusive buyers guide to Britain's top-value IBM-compatible

There are few more difficult tasks than buying a PC-compatible. It's rather like one of those Mensa tests where you have to spot the logical relationship between six confusingly different pictures.

Taken a step at a time, you might be able to choose between 8088 and 8086 processors, 512K and 640K of RAM, between mono and colour displays. But the choices pile up, and manufacturers insist on offering ever-so-slightly different configurations.

How do you choose between 512K and colour, or 640K and mono? Which is better: twin floppy disk drives, or an extra two or three expansion slots? Does a free mouse make up for the absence of an RS232 interface?

When you start to take pricing into consideration, the fog of despair settles and you could be forgiven for simply buying the first machine you find in a High Street shop window.

We decided to take a more considered approach.

Cutting through the fog

To help us make a choice on a more rational basis, *New Computer Express* developed a way of rating every commodity-based feature in PC hardware for desirability. By comparing the total desirability rating with price, we were able to determine easily how attractive each purchase would be.

Not all machines qualified - quite a few failed to meet our minimum spec of 512K RAM, single floppy disk drive, one parallel and one serial interface, and a monitor of some description. Some manufacturers even make you buy the MS-DOS operating system separately (an odd approach to PC compatibility).

A few more quickly fell by the wayside - would you buy a machine that had half the features of an Amstrad at three times the price? That left a few



hundred contenders and these were slowly winnowed down to a shortlist of about 25 machines in some 70 different configurations.

These machines were then awarded ratings in the following categories:

Power	20pts
Storage	25pts
Display	15pts
Expandability	35pts
Usability	30pts

The sum of these five ratings gives a **Total Desirability Score** out of 105.

There are built-in biases in these ratings: a hard disk is rated more desirable than VGA graphics; the Power rating combines processor and RAM because a slow processor with lots of RAM is as useless as a superb processor with very little RAM. Undisputed was the heavy share of points because it covers a lot of details: built-in interfaces, extras like mice and extended keyboards, and bundled software.

The **Express Value Rating**, or **EVR**, is calculated by comparing the Total Desirability score with the machine's price. The maximum EVR of 16 is equi-

alent to an imaginary perfect machine (with a total Desirability rating of 100) selling at an unbelievable price of £1,000 (impossible, but then perfection is supposed to be like that).

Six PCs came out remarkably well with EVRs ranging from 7.9. Full details on all six are printed on the next two pages.

The machine which came closest (with an EVR of 9) is a long way from perfection, but then it's also a long way from £1,000. (Incidentally, we estimate on a similar basis that the Atari 5040ST with colour monitor also comes up with an EVR of 9.)

Take your pick

Choosing your own personal winner depends on your answers to two questions:

How much can I afford?

If you're on a limited budget then the Olivetti or Commodore machines are your best bet. The latter job has a definite edge, but when you add in the VAT it will cost around £100 more - not much but it could be the deciding factor.

It may seem that there's an unaccountable jump in price of the selected machines from £400 to £750, but remember our winning machines are based on value for money, not cost alone. If you want a mid-price machine, consider the Amstrad 2886 with more features - pretty good value at £560.








What do I want to do with it?

Our six winners cover just about all eventualities. The Olivetti and Commodore machines are perfect for home use; the Amstrad 2886 will handle any application that isn't too demanding, while the tougher tasks - serious business use or heavy-weight programming - look at the hard disk systems, the Thomson and Advent machines, or our only AT-compatible qualifier, the Amstrad 2286.

The big losers

The question on everybody's lips is: what came out as the worst-value machine? A lot of computers here - it could have been the £1,795 Hewlett-Packard Vectra, or the Canon AS2002 at £1,595, or even the £1,595 Honeywell-Bull PCXP. But the hands-down winner is a well-known German value-for-money offering which is almost a cut-down Commodore PC1 for the bargain price of £2,980 - an EVR of 0.9. Let's hear it for **Nixdorf!**

RATINGS and WEIGHTINGS: a unique

	Commodore PC1 	Olivetti PC1 	Amstrad PC2086 
PRICE The list price, ex VAT, for each model in the configuration described. We have priced the configuration we consider best value.	£315	£399	£749
POWER (rated out of 20) Covers the power and speed of the central processor and the amount of memory available measured in Kibibytes (K).	● 8088 processor running at 4.77MHz ● 512K memory expandable to 640K on board	● 4.77/6MHz 8088 ● 512K expandable to 640K on board	● 8086 ● 640K
STORAGE (out of 20) What type of disk drives are included. Two floppy drives are better than one and 3.5" is better than 5.25". Best of all is a large hard disk.	● 1 x 5.25" 360K floppy	● 1 x 3.5" 720K floppy	● 1 x 3.5" 720K floppy
DISPLAY (out of 15) The graphics modes built in and the monitor supplied for the price quoted. Hercules is highest rating, CGA is a simple colour card (lower mono mode, EGA better colour, VGA best of all).	● CGA adaptor, mono monitor	● CGA display, supplied with mono monitor	● VGA-standard adaptor, hires colour monitor
EXPANDABILITY (out of 10) The number of slots available for expansion cards built in (hard disk cards or modems), and the facility for adding other peripherals. ● No expansion slots	● Capacity for external floppy and hard disks ● Single slot for PC	● expansion cards ● 2nd floppy drive, or 40Mb hard drive available ● Colour monitor optional	● 3 x standard expansion slots ● 2nd floppy disk or hard drive
USABILITY (out of 30) Covers all other features supplied with the machine which improve its versatility.	● 1 x parallel printer interface ● 1 x serial printer/modem interface	● 1 x parallel printer interface ● 1 x serial printer/modem interface ● First Choice integrated software package - word-processor, database and spreadsheet	● 1 x parallel printer interface ● 1 x serial printer/modem interface ● Mouse ● Expanded keyboard
TOTAL DESIRABILITY SCORE (out of 100) The total of all the previous ratings.	23	37	63
EXPRESS VERDICT How it stacks up overall, what it's best features are, who it's aimed at.	● Rather limited, even in comparison to the Olivetti PC1, Commodore's entry-level machine lacks any internal expansion possibilities, and features the original, slow processor of the IBM PC. However, it's priced accordingly and is almost certainly the cheapest PC with monitor available in the UK so if you want bare-minimum PC-compatibility without paying much, this is the machine.	● Although technically limited, the Olivetti's low price makes it unbeatable value for money. The 720K floppy disk provides the equivalent storage of an older twin-disk PC, and the inclusion of the First Choice software means you can put it to use straight away. The expanded versions score a slightly lower VFM rating, but if you think you might want colour, you'd be well-advised to buy it immediately - second-hand mono monitors are virtually worthless.	● When Alan Sugar announced the PC2086 series, many observers lamented the lack of an earth-shattering price. But the machines still represent good value for money. The 2086 may not have a super-fast processor, nor the high-capacity hard disk many businesses will require, but it is a capable system and there's the flip of future-proof graphics. With the 2086 you get VGA at the price many mail manufacturers are asking for EGA.
EXPRESS VALUE RATING Total Desirability compared to Price.			

evaluation of six top-value PCs

Elonex PC88C



£775

- 4.77/10MHz 8088
- 640K

9

- 1 x 5.25" 360K floppy
- 1 x 20Mb hard disk

18

- 1 x 5.25" 360K floppy

- Hercules-compatible, with mono monitor

4

- 4 x standard expansion slots

6

- 1 x parallel printer interface
- 1 x serial printer/modem interface
- Mouse
- Gem v3 with 1st Word and Gem Paint

21

58

- A business system offering very good value for money. The fast 8088 processor, coupled with the 20Mb hard disk and Hercules-standard graphics make it a good choice for serious word processing and general office use.

With this machine you get a compact design that still allows you space for four standard expansion cards. And the software bundle is reasonable (although a more businesslike package wouldn't hurt).



Advent PCXT 10 1mb



£995

- 10MHz 8088
- 640K

9

- 1 x 30Mb hard disk
- 2 x 3.5" floppy disks giving a total of 2.88Mb of

23

- EGA adaptor, mono monitor supplied giving Hercules-standard display

9

- 8 x full PC expansion slots
- Colour EGA option (£200 extra)

10

- 1 x parallel printer interface
- 1 x serial interface
- Extended keyboard
- 1-year on-site warranty

18

69

- A fully-equipped business workhorse. Although it's not likely to set many hearts beating with excitement, with a reasonably nippy processor, 30Mb of disk capacity, and either Hercules or EGA colour graphics, it's almost impossible to fault. The one-year on-site warranty will probably convert any doubters among the business fraternity.



Amstrad PC2286



£999

- 12MHz 80286
- 1Mb expandable up to 4Mb on board

16

- storage

13

- VGA-standard adaptor, mono monitor supplied

13

- 5 x expansion slots
- VGA colour monitor (£150 extra)
- 40Mb hard disk (£350 extra)

8

- 1 x parallel interface
- 1 x serial interface
- Mouse
- Extended keyboard
- Windows 286

22

72

- There are cheaper AT-compatibles, and there are cheaper VGA machines, but there aren't too many systems that can give you this standard of computing power at the same price.

A machine that will see you well into the next decade.



The D-I-Y Option

You can use our rating system to evaluate any of the hundreds of different PC models available.

Simply compare each aspect of your chosen PC with each of the six listed here and award it the same number of marks as the one it is closest to on that aspect.

For example, if it has one 3.5" 720K floppy drive like the Amstrad PC2086, award it 12 points for Storage. And so on.

By adding up the points you can then determine its Desirability Factor, and by dividing that by the price (in hundreds of pounds) you can come up with a value rating.

We'd be interested to hear of any PC configurations which come out particularly well or particularly badly!

Write to: PC Comment, New Computer Express, 4 Queen Street, Bath BA1 1EJ.

Where to buy

If you know what you want, the cheapest way of buying a PC is mail order. Check out the adverts in this magazine and remember you can use the voucher on page 41 to obtain a further £10 discount. If you prefer to buy elsewhere, here are the details.

Commodore PC1 - any Commodore dealer. Call Commodore on 0628 770068

Olivetti PC1 - available through Dixons.

Amstrad machines are available from various dealers and Amstrad Business Centres. Details on 0277 228688

The **Advent PC** is available mail order from Vision 101 585 26541. Likewise **Elonex** is sold mostly mail order - call 01 965 3225.

THE WINNER

The Olivetti PC1 comes out of our survey as the overall best buy.

It's ideally suited to anyone who wants to run IBM-compatible software at home or who's looking for a low-cost entry to the world of PC computing.

But even more important than the make, is the need to make sure that the configuration you buy is the one best suited to your needs. Happy shopping! ●

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G. Lister's Top Shot 29	6.75	6.75	10.50	6.75	10.50	13.50	13.50
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G. Lister's Top Shot 31	6.75	6.75	10.50	6.75	10.50	13.50	13.50
G. Lister's Top Shot 32	6.75	6.75	10.50	6.75	10.50	13.50	13.50
G. Lister's Top Shot 33	6.75	6.75	10.50	6.75	10.50	13.50	13.50
G. Lister's Top Shot 34	6.75	6.75	10.50	6.75	10.50	13.50	13.50
G. Lister's Top Shot 35	6.75	6.75	10.50	6.75	10.50	13.50	13.50
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The best Amiga wordprocessor?

Ben Taylor assesses Protext on the Amiga, the latest version of Amnol's old WP fave

Too many cooks spoil the broth, goes the old proverb, and in the past word processing on the Amiga has all too often been a case of lots of colours and fancy fonts but not much attention to the essentials of getting words onto paper.

Protext began life in 1985 on the CPC, migrating to the PCW in '86, PC in '87 and ST in '88. Now it comes to the Amiga with a reputation as a no-nonsense package aiming to deliver text processing without taking out.

User Interface

True to its roots on CPC, PCW, PC and ST, you are faced with a screen and horizontal dividing bar. Above the line is the text you are working on, and below it where you type in any commands such as loading and saving files. Pressing [Esc] expands the editing part of the display to the full screen, whenever you can get down to the serious business of punting those queries.

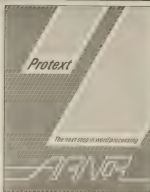
Editing is generally keyboard driven as its [Ctrl]-M to move a block, for example. However, for version 4 Amnol have also put all the commands on standard menus. The program runs as a proper multi-tasking Amiga application.

The interface remains unconventional. You can't open multiple windows (though Protext has two editing screens anyway). For entries, rather than selecting text and choosing 'Bold' on a menu, you insert special codes in the text. Another oddity is that Protext ignores all the Preferences printer drivers and uses its own instead. For better control, Amnol say.

Features

Protext is a word processor that you feel the designers have actually used. Of course it's got block copying and moving, of course you can set words in bold, italic and underlined, of course there's a mail merger and spell checker. And they're fast. But what makes it so good are the extras. There's a good Undo and a built-in calculator. A unique feature is the 'Box' mode, which lets you to move any rectangular block on screen. Bonus allow you to shuffle columns of tables around or create pages of two- and three-column text - almost DTP-like.

Every command and every keystroke can be stored in a file and executed automatically. You can do things like setting up [F1] to run a



• Protext Amiga showing off its on-line drawing capabilities is the top half of the screen, while working out a VAT sum below

string of commands to delete the first three characters of each line.

Other goodies include an ASCII editing 'Prog' mode, and the ability to run any Amiga program from within Protext.

Protext's mail merger is very powerful, allowing you to construct complex conditional loops to mailshot only selected people. The spell checker lets you choose between three different dictionaries for speed - but spell checking from floppy disk is slow as the best of times. Unfortunately, memory is too low to run the spell checker from within Protext on an A500.

Protext lacks the ability to import graphics into text files, nor can it access any of the fancy Amiga system fonts. This, Amnol argue, is the price of its speed.

Documentation

The biggest complaint is that at present the Amiga manual is a PC manual with a few sheets of Amiga-specific addenda tacked in the back flap. Don't we get our own manual for 100 quid then? Having to wade out the MS-DOS commands is annoying, and the Amiga-specific installation instructions are poor.

On the whole, though, the manual sections are clear and there is a good selection of appendices to aid as the seasoned user reference guide. All that is missing is a better cross-referenced index. The manuals and a convenient help system supplements the manual.

Verdict

Protext knows what it does - it doesn't make any attempt to compete with the processing-based WPs. However, if what you want to do is process words, then quite simply Protext is the best Amiga Word Processor. But, shape, why is it £20 more than on the ST?

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Horses for courses

- Now well with Protext meet your needs?

- If you're a complete novice as the Amiga, you could be in trouble. Protext's installation process is tricky.
- If you want to be able to use the Amiga special fonts (opal, Emerald etc.) or import graphics, Protext is no good to you.
- But if you're in the business of handling BIG documents or DIFFICULT mailshots, or in fact for any editing task, Protext is the only one with the power you need.
- If you're a programmer, there is no better editor on the market.

As a test of its speed, we did a Find-and-Replace on a word occurring 207 times in a 6000 word test file:

Protext	Word Perfect	Scribble	Vagaville
3.7s	8.6s	35s	63s

HIGHLIGHTS

- Superfast editing
- Powerful 'macro' command language ideal for repetitive editing chores
- Comprehensive mail merger and spell checker
- 'Prog' mode for programmers' ASCII editing

DRAWBACKS

- A500 can't spell check within Protext
- Can't include graphics or alternative fonts in files
- Not friendly to the beginner

One up on 3.0

The Amiga Protext is version 4 of Amnol's outstripping software. If you've used version 3 on CPC, ST, PC or PCW then there's good news and bad news. The good news is the enhancements.

- Auto reformatting of text fairly hair-brained though - it doesn't format beyond the current cursor position
- Menu-driven operation rather than control keys
- Footnotes
- Headers and footers up to nine lines each
- A line-drawing utility to let you add boxes to your text
- Better printer drivers
- Macros record mode - Protext enters what editing keys you press then rebuilds them

Version 3 has all the features mentioned in the body of this review apart from the ones in this box. The bad news is that if you own a CPC or PCW, you ain't gonna get version 4. Amnol reckon you just ain't lucrative enough to be worthwhile. Shame.

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Prestige Software
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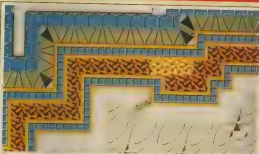
Games meltdown

From the new 3D action titles to the classic strategy games, we've got you covered. Here's a roundup of the best new games to play on the Amiga.



GRAIL ADVENTURE MICRODEAL

You take the role of Elliot here, a wizard searching for the Holy Grail with Gabe, your friend and servant, in the land of Kobor. Of course, there are many perils awaiting you out there, but gameplay is arranged in such a way as to let you define your own outcome to the story. A fully menu-operated adventure featuring multi-optional dialogues boxes brings a fair measure of interactivity to the standard text adventure and a whole stack of colourful graphics as well.



FUSION ELECTRONIC ARTS

Shining out on the ST after its watershed debut on the Amiga, comes EA's strategic photorealist, with artwork that should feature in the world's art galleries and wondrous gameplay that should keep you busy for days. Find and reassemble the parts of a bomb blown throughout the barren levels, and evade hot spots of enemy hiding beneath silos and bunkers. Then blow everything to bits.



TECHNOCOP GREMLIN

In these 200 mph plus Road Wars, your quest is to eliminate the biker that are destroying society. Yes - you're a cop. So after driving through endless highways of harpin bends and steep terrain you'll be only too glad when you receive reports of a nearby disturbance on your video radar and pay a visit to the scene of the crime. Then hit everyone you come across.



TINTIN ON THE MOON INFOGRAMES

The first licence based on the Hinge characters, with you playing Tin Tin alongside Snowy the dog, Captain Had dock, Professor Calculus and the Thompson Twins. Blasting the effects of weightlessness, you must plot your spaceship through meteor storms and hostile attacks and attempt to land amidst the craters of the moon.



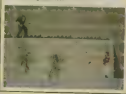
AIRBALL MICRODEAL

Believe it or not, this time you're a rubber ball. In a 300 room mansion you have to find a spell book that'll return you to human form again. Unfortunately, though, you have a trick, so you have to locate air pumps on your way and fill up - carefully the too long and you explode. Watch out for spikes too! They'll take your breath away. Crisp and geometric graphics complete a compulsive adventure for Amiga heads only.

This week's sneak-a-peek...

DRAGON NINJA IMAGINE

Available as a free demo with ACE's next issue is the dual-format ST/Amiga version of this martial arts kick-ass-up, and very nice it looks too. Eight levels of aggro-aerobics will see you attempting to total any bad dude that comes within striking distance.



SANXION THALAMUS

Prolelix hits the Spectra, with music from Roman and Juliet to accompany this epic blaster - which surfaced a couple of years ago on the C64 and sold quite nicely, think you. Billed as the Spectrum flexer, it's a horizontal scroller in which you get to see action displayed from both side and overhead views simultaneously. Goal? Be disappointed by the ivory early screenshot - Colaz should be keeping it's way in there nearer to release date.



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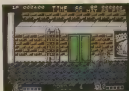
- make sure more than one person sees each game, so that the verdict can be relied on.
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- give games of particular significance their own box, together with a flash to say what's different about them.

DOUBLE DRAGON

Atari 2600, 5200, 7800

Spectrum, MSX, Amstrad

Amiga, Atari ST, IBM PC



● Spec - Domination's the name of the game

Double Dragon is a conversion of the immensely playable coin-op beat 'em up courtesy of Midway House.

● VERSION UPDATE

You'll have to take on the scum of the city in a bid to rescue your girlfriend from an evil street gang in this one. It's another two-player kick'em-to-death-em-up. You have the usual range of martial arts manoeuvres, ranging from jumpkick to a 'well' and headbutt. As you steam through the opposition you'll meet all sorts of wonders, such as whip-carrying women, baseball bat maniacs and massive moose - it's a good job you can use these weapons against them if you get the chance. Visuals give a very good account of themselves - with large, nicely defined and animated sprites and accurate reproductions of the backdrops. The only flaw is that the sprites are not always clearly visible - fortunately, with the speed of the action you hardly have time to notice. The functional soundeffects are less impressive and limited in number.

● C64 VERSION

Oh dear, the programmers have really screwed up with this conversion. You know something's up as soon as you read the instructions, which includes a scolding apology

MICROPROSE SOCCER

MICROPROSE

C64 £14.99cs, £19.95cc

Due out on PC early '89

(Other versions under consideration)

Get you'll never guess what Microprose Soccer is all about... Give up? Well it's yet another contender for C64 football sim of the year, only this time, it could actually be the league champion thanks to the talents of the Sensible Software boys - who are also responsible for those other C64 greats: Parallax, Mickal and Shoot'em-up Construction Kit.

● GAMEPLAY

You start off by choosing which type of league you want to indulge in: Association Football or American Rules Six-a-Side (later Microprose are a Yankee-orientated lot). The major differences in the US version are no-wide instead of the usual 11) and an indoor pitch which is reduced in size. There are also differences in the regulations governing play and a slightly faster pace.

Once the game has loaded, you are faced with the choice of Microprose International League, World Cup Tournament, Soccer League, Two Player Friendly, Demo Game, Control Panel or naming your team.

The first four options allow you to decide on how many players (1-11) will participate in the ensuing soccer action. Demo programs a quick look at a game for those unfamiliar soccer stars. The control panel produces a range of options: manual/automatic player selection during play, weather conditions (switch out for those lightning bolts), banana kick power (swerve those balls), goal length (2-12) minutes, replay (switch those slow motion and replay on/off), mono or colour display, soundtrack on/off and save/load league parameters.

When you actually get down to the action, you're placed on an over-head view of the pitch complete with some fancy soccer moves such as the Marenreinstein banana kick (and a truly impressive over-head kick, as you tackle your way through the big match.

● GRAPHICS AND SOUND

It's refreshing to see a new style of graphic representation in a microprose soccer game this usual viewpoint being the one to 3D side-on perspective, with adequate quality overhead visuals. Sprites, animation, definition and colour are all superb, although there's not a lot you can do with the graphic design of a football pitch!



● C64 - We've heard of close co-ordination, but this is ridiculous

Audio is of a reasonable standard, containing spot soundeffects ranging from whistle blowing notes to ball bouncing noises - accompanied by a loudback sound track.

● OTHER VERSIONS

We're afraid other machine owners will have to wait a while, 'cause it looks like Microprose are gonna take their time producing conversions of this one - write in and tell them to get a move on!

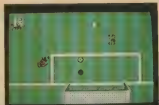
● EXPRESS VERDICT

We believed Commodore's International Soccer to be the definitive football simulation on the C64 - until we saw Microprose Soccer - now we're not so sure.

With its hoist-gain-splattering options, foot-blasting audiovisuals and head-spinning gameplay, Microprose Soccer is an essential purchase for any C64 football fan.

★★★★★

Rik Haynes



● What's the England guide doing?



● It's a good job England's got Lutetia!

concerning the technical faults of the C64 hardware, forcing compromises to be made in the conversion.

In play, the sprites are minuscule and totally out of proportion with the background. There's also a bug which leaves them with a gap in the middle. And these are just minor failings when compared to the awful gameplay - your manoeuvres are completely different to those in the arcade parent. Note to the programmers - try playing the arcade game next time!

● EXPRESS VERDICT

Spectrum DD is a far superior to the C64 version, giving an accurate and exciting rendition of the comp's visuals and addictive gameplay. It's got a good balance between playability and testing interest, so prepare yourself for some martial arts mayhem.

★★★★★

Rik Haynes

PURPLE SATURN DAY

EXXOS

EST-624866K

Use out soon on Amiga

This is the second of six projected releases for the coming year via Infogrames/Eire on their new Exxos label and continues the distinctive graphic work of Captain Blood's Didier Bouchez. As you might expect, the result is bound to look very sexy – and that's before you've even cranked up the volume control.

● GAMEPLAY

Purple Saturn Day is a tournament comprising 4 events in which you compete against one of eight aliens in a knock-out series, requiring skill, response, coordination and strategy. You may choose to proceed each event with training outings against robotic partners or plunge headlong into the venues for the action – somewhere just off Saturn!

Your first opponent is chosen at random from a range of bizarre creatures, including some of the characters to be found in Blood. After checking out your opponent's performance in previous events and his/her/its attributes (strength, intelligence/speed, sense of direction etc) you get down to the real business: playing games.

Should you choose to try your luck first with Ring-Pursuit, you'll find yourself among Saturn's rings, dodging



● The attributes of another alien adversary you're up against

meteorites and satellites as you race against your opponent in a bid to take the lead and thereby score points. Once ahead you can increase your scoring rate by evolving to the right of the red satellites and left of the yellow ones. You move the mouse forward to accelerate, back to brake – though to get ahead of your opponent it's best to veer to the outer edge of the rings and then cut inside for the satellite slalom. After completing a full circuit of Saturn the race is over, your relative scores are noted and it's onto your choice for the next event.



● Baffling brain battles as you charge through cerebral circuitry



● Running rings round Saturn as you dodge a passing satellite

'Trans-Slider' is set within a four-sided arena where you're in a buggy fighting to gain energy by firing kicking the left mouse button at fast-moving energy bolts before your opponent has chance to hit them and thereby absorb their energy. Movement is effected in the same way as in Ring-Pursuit though this time the arena is littered with an ever-increasing lattice of obstacles to compound difficulty. Fortunately, your craft, which the French programmers nicknamed 'the bar of soap', has hyper-manoeuvrability – just clicking the right mouse button while turning will effect a full 90 degree about-face wheel – which is just as well since otherwise you could be immensely frustrated.

Next up is Brain Bowler, which is the most taxing of the four events in terms of exercising the grey matter. You're fighting to reactivate one half of an exploded brain by directing 6 charged neural impulses through an intricate convoluted circuit of gates and conduits. By firing at various components in the network to open and close pathways you can direct current to the centre of the brain whilst attempting to sever your opponent's connections and steal energy from supply pads. The action here is at once both cerebral and strategic and like every other event in the game here, so involved it could have been marketed as a game in its own right.

Time Jump is relatively straightforward by comparison, containing all a more traditional shoot-'em-up, where you have to blast several series of waver stars as you struggle to control your ship's progress through energy streams in a bid to come first at Temporal Lang Jump.

After completing the four events your score is added up and if you beat your

opponent you progress to the semifinal stage where you find yourself up against the winner of another contest. By the time you will find you and your opponents' attributes will have been updated accordingly, as indeed they will be every time you subsequently boot up.

● GRAPHICS AND SOUND

One screen surround, that of your cockpit complete with animated finger movements as you control whatever vehi-

cle you find yourself in, links the visuals comprising each event. Needless to say, this is immediately reminiscent of the ship's interior in Blood – emphasis is placed on the blue and purple end of the spectrum – with substreams of color showing your position and progress, you and your opponent's scores up too, and the event timer down below. Animated action within the screen is spectacular in all events. In Ring Pursuit for instance, you have simultaneous independent scrolling of three surfaces along with fast scaling sprites.

Sound effects are hot too – with what sounds like digitized spot-effects underlying every collision you come across. Once again, you're left with a top-notch French extravaganza which, and this should be written in six each high letters, DOES HAVE GREAT GAME-



● Just about to blast the energy bolt before your opponent beats you to it

PLAY:

● EXPRESS VERDICT

Definitely the best game to have arrived at these offices since Express was launched, and easily one of the strongest releases of the year, Purple Saturn Day offers great value for money. Here you have brilliant graphics, solid sound and diverse gameplay all wrapped up in one great package which would take you a journey to Saturn to master. Yep, it's got insidious involvement. And it'll run rings around the competition on release.



CAPTAIN BLOOD

INFOGRAMS

Amiga - C24.954K
Also on ST, PC, CPC
Also on C64
Also on Spectrum

Infogrames' best-selling release to date is a intergalactic adventure featuring some of the best graphics and sound available on all formats. It's also rare among exploration games in that it includes conversation with a range of animated characters, involves no violence of any kind, and requires tight ship sensitivity in its aerial sequences.

GREAT GRAPHICS!



• Sliding down a canyon on your way to a rendezvous with an alien...

● GAMEPLAY

You've been cloned thirty times, after you built and piloted a prototype bio-tech hyperspace vehicle that had a small accident off Andromeda. You're after your five remaining clones hidden across the galaxy, and you're wondering which of the 32,000 planets available they're hanging out on. Fortunately, there's 13 types of alien you come across down or planet surfaces who, in exchange for various favours ranging from destroying worlds to finding their sexual partners, will provide you with the co-ordinates of the next stop of your mission. All computers are mouse and keyboard controlled. You have a galaxy map and crosshairs with which to pinpoint a destination, and from there you hyperspace to the selected location and dispatch a controllable surveillance vessel to the planet's surface in order to meet the inhabitant. All worlds require low-level flight over mountains, valleys and forests, and you have to locate a canyon at the end of which should be your alien. Using a system of 120 icons you must attempt to glean information from your text who can be very elusive - your approach has to differ according to the character encountered - and you're never quite sure how much they are hiding from

you.

Each new game has a brand new set of inhabited planets, making Captain Blood a long, long venture.

● GRAPHICS AND SOUND

After the superb visuals of the ST version you might expect the Amiga's capabilities to enhance Blood's graphics further. But there's not a great deal of difference - if anything the ST's are slightly better - nevertheless you're talking high-quality. The wire-frame animation of the planet surface contours are as good as fast, revealing planet and creature movements identical, and the hyperspace and planet destruction sequences virtually identical.

Where the Amiga version scores over the ST, however, is in the sound effects dept.

All spot-fx and atmospherics are drastically improved and benefiting from stereo output. Disappointingly, Jean Michel Jarré's intro theme hasn't been lengthened, but what's there is easily the best loading screen music on any game released - both the exception of the intro to Links by G2 on the Amiga.

● OTHER VERSIONS

The Amiga version easily outclasses all others - with the exception of the ST, where it's a close finish. The CPC, C64 and PC releases tag along behind, suffering from their relatively poor machine specs - though the C64 version is a very brave effort. Blood's out on the Spectrum later this month.

● EXPRESS VERDICT

Graphically, one of the greatest releases on any format, Blood relies on long-term attention. Once you've mastered the flying sequences and icon conversation it's down to B2 taking the cryptic puzzles presented by its alien characters. This can be a long drawn out process - possibly longer than its graphic excellence compensates for.

● EXPERT'S CHOICE

★★★★★

Andy Storer



• ...and here he is. It looks like he's got plenty to chat about

through such infamous cliché-ridden Western scenes as the canyon, the railroad and the obligatory ghost town.

Help comes in the form of barrels scattered across the landscape - which, when shot, will give you collectible goodies like extra bullets, dynamite (smartbomb) and



• This town ain't big enough for the three-and-a-half of us

cowboy boots (speedo).

So hit the shoot-out trail again - but keep an eye on your ammo total or you'll end up feet first in Boot Hill.

● GRAPHICS AND SOUND

Audio-visually are best described as simple but adequate - ranging from reasonably well-animated smashes to low-key gunshot sound-effects.

Far from satisfactory is the really awful title page and soundtrack - why bother including this sub-standard track?

● OTHER VERSIONS

The only other version planned is the Amiga - perhaps the sound will be better?

● EXPRESS VERDICT

Mixed is no more than a simple, although at times amusingly frustrating, verbally-screwing shoot-invasion in the Commando mould - albeit with a new twist in the scenario.

It's probably worth a look if you haven't already got Microdial's Leatherheads or Elite's Gun Warriors.

★★★

Rik Haynes



Transputer II, designed by Clement Jack the Ripper Chambers, and is yet another Breakout clone, seen with a new (but not necessarily improved) pseudo-3D, isometric view of the action.

● GAMEPLAY

Transputer follows the standard route of the genre - you knock out bricks using a bouncing ball which is manipulated by a ball under your control. You also have a limited supply of missiles which can be used to directly take out the bricks.

Occasionally bricks yield a desirable item such as a larger ball, more missiles or a score bonus. When all of the bricks have been destroyed, you'll move on to the next screenful, which is basically the same as before...



• You'd be hard pushed to find a worse Breakout clone than this

● GRAPHICS AND SOUND

Suffice to say that Transputer probably offers the worst colour scheme of any game this side of a ZX81 release, and is perfectly complemented by the amateurish graphic design style employed.

Audio is the only near-adequate aspect of the game, with short and muffled sampled sound-effects and speech extracts used extensively throughout - so extensively you'll probably grow sick of them after only a few games.

● OTHER VERSIONS

ST Transputer closely replicates its Amiga partner - but that's nothing to be proud of.

● EXPRESS VERDICT

Whatever happened to the CRI, that produced the classic Tau Ceti on the Spectrum? - A surely must be beyond redemption if this release is anything to go by.

The originality of Transputer comes in the form of total unplayability, chaotic visuals and incredible boredom. There's no point in bothering with this sub-standard release, when you could go for Ocean's Arkadon II on the ST or Microdial's Gigatron on the Amiga.

●

Rik Haynes

WANTED

Infogrames

Amiga

Also on Amiga

Remember Capcom's Genshoke arcade game? Well Infogrames obviously does, as their latest release is even so slightly reminiscent of the aforementioned vertically-scrolling shoot-em-up.

● GAMEPLAY

Taking the role of a shoot-and-destroy, guarding sheriff you'll have to chase up the West by warring out the wanted criminals in the area - but the higher the price on their head, the tougher the opposition will be. During play you'll travel

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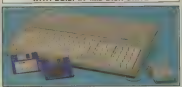
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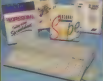
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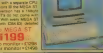


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The Assembler - no waiting zone

GenAM was always fast but the all-new algorithms means it's even faster, particularly on larger programs. It handles multi-hunk code, 127-character significant labels, local labels, improved macros & conditionals, generates directly executable, or linkable code, and a stand-alone version is included so you can use a CLI, a batch file or an alternative editor.

The Debugger - kills bugs, dead

How many times do you write a completely bug-free program? Trying to debug a program by looking at guru numbers is what some development systems leave you to do. We include a disassembler/monitor/debugger called MonAM, which uses its own screen display, leaving your program's output alone. It has a range of different types of breakpoints including count and conditional breakpoints. For example you can stop after the 24th exit to print or stop if the contents of mem_ptr become odd. You can also break into runaway programs, or you can even view your source-code files from within the debugger and use multi-hunk program symbols.

Ideal for Beginners & Enthusiasts

The editor is fast and easy to use, you can assemble from memory to memory then execute it repeatedly to try your ideas out, all without a disk access. Press a key and you're straight into the debugger, you can even debug programs assembled to memory with their original symbols. No linking is required - the assembler can generate directly executable programs immediately. Interested in hacking somebody else's code, such as the ROM? - with the debugger you can disassemble to disk with automatic labels, including system calls. All programs will work on a 60-column display.

Ideal for Professionals

If you're not using Devpac for software development then you'd better hope that your rivals aren't either. Why wait for your editor to load a file or for your assembler to churn through it - GenAM is the fastest professional assembler available and is fully source code compatible with the MCC assembler. We write in 80000 assembly language every day so we understand what you need.

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Integrated debugger	N	N	Y	Y
Macro parameters	10	10	9	30
Multi-line macro calls	N	N	N	Y
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Local labels	N	Y	N	Y
Executable, relocatable code	Y	N	Y	Y
Linkable code	Y	Y	N	Y
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Assemble to memory	N	N	Y	Y
Stand alone assembler	Y	Y	N	Y
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Debugger supplied	Y	N	Y	Y
Disassembler	Y	N	Y	Y
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Single-step	Y	n/a	Y	Y
Breakpoints	Y	n/a	Y	Y
Conditional breakpoints	N	n/a	N	Y
Full expression evaluator	N	n/a	N	Y
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Break into running programs	Y	n/a	N	Y
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Figuring out the phenomenon

Part two: William Poel reveals the financial secrets at Amstrad

Although it's difficult, in this instalment I try and analyse Amstrad from the more neutral perspective as Mr Amstrad. It is unavoidable that the Amstrad story revolves around Alan Sugar, but there is another facet to the way the company grew and developed in the years up to the encounter with their first home computer.

Amstrad was founded in 1966, and went to the Stock Market in 1982. This is a pretty good amount of time for an organisation to have the head way. With a turnover based on organic growth (i.e. not much borrowing) of £2m in 1980, Alan Sugar decided to cash in a few of the chips. There was, though, really no good reason to do so.

I guess the lure of the cash was hard to resist, as Alan Sugar has never been anyone's idea of a workaholic, and has always maintained a separate and very private life. But only about 30 per cent of the issued share capital was placed in the hands of the public. Alan Sugar kept hold of most of the stock for himself and only sold some 25 per cent as the first place, subsequently watering down to 50.66 per cent at the end of the 80/85 year.

The popular view is that 35 per cent of a public company held in one place represents effective voting control, and only a fanatic would choose to vote against the wishes of the founder of an enterprise when the founder was the entrepreneur. But it does happen occasionally.

Slaughter the goose?

The current Amstrad accounts indicate that shares held by Alan Sugar (in his own named account) for some 24.6m of a total of 55.5m paid up. This is only 45 per cent, so theoretically the shareholders could now gang up and slaughter the golden goose on a show of hands. This is unlikely, and one of the reasons for the gradual decline is reputed to be a choice by the City to see the guaranteed autonomy of Alan Sugar somewhat less guaranteed as evidence of his good faith in the way the City works. And pigs may fly.

Should Amstrad ever become the target of takeover rumours, many of the gamblers in the City would stand to make a fortune, as the company is likely to bring with it probably the lowest value rating - based on historic performance and that notorious thing called "black board" - of any share in the world.

For many years, Alan Sugar did not extract his entitlement to dividend, and viewed this possibly huge drain on the company's resources. This act of magnanimity went a long way to pacifying the shareholders who have historically received only a meagre dividend from Amstrad, settling instead in capital growth as the share price generally doubled on an annual basis.

So although the company may have earned 12p per share in 1985, it only distributed a penny or so to the shareholders, the rest being retained. And using this tactic, Amstrad has ploughed no money straight back into the business to fund its startling growth.

Amstrad tips the league on turnover per employee and return on capital employed over the past few years, and these are the best measures of entrepreneurial skill and enterprise of all. Any CEO can sack 50,000 with shareholders' funds of billions... just sack it in a building society.

In contrast the com-



The Alan Sugar Story

• Sugar: Nationally worth £40,000,000

pany, it's also worth observing that Amstrad pays its managers (relatively) very little in the UK published accounts. A public company is obliged to list the remuneration of its higher paid employees in the published accounts, so it is interesting to see that in the 87/88 period, Mr S took home a meagre £133,000. Which, although some of you may find hard to digest as shocking peanuts for a company of the size and profitability of Amstrad, however, has technical sides of the wedge (from his shareholding was £40,000,000, so he isn't on his uppers just yet, John).

Other directors were paid in the region of £50,000 according to the UK accounts. Again, bolstered by share options, but otherwise (other modest by industrial standards).

Flying in the teeth of wisdom

In fact, Amstrad has a well-earned reputation for paying its staff rather modestly, as Alan Sugar believes that well-disciplined staff there are more useful as soldiers in his organization than properly rewarded, talented (and highly mobile) mercenaries. This philosophy is largely proven to be correct by results, but probably another of the reasons why the City regards him with suspicion. This is not the conventional wisdom.

This philosophy was also encouraged and endorsed by his fellow directors, and when he was confronted with the task of hiring a couple of new faces at rates perilously close to those being paid to his existing likes, he was obliged to construct a scheme to make the apparent salary being paid rather less, in order to keep the old guard happy. And we are not talking seriously large sums of money here, I know, because I was one of those new faces.

But however irritated an observer can get at the frustrations of being close to Amstrad and watching what many perceive as opportunities being wasted (the PPC is its pet frustration, so near and yet so far off the mark), the fact remains

that on balance Amstrad delivers, and is now doing so with the respectable buffer of parallel operations around the world.

Amstrad can get it right, all the time, and Mr S does not want to have the worse sort of mouthpiece mechanism that most conventional public companies use simply to apply the vanishing cream to the means (it's called PR), the Amstrad way is widely expected as the best (even as someone more interested than good news. Particularly where the proportions are so heavily weighted in favour of bringing good news. •

Dialogue of the deaf

For someone who can change from 0 to 100 in the drop of an inch, the City is a red rag to Alan Sugar. The relationship between the two parties is at best distant. The City's dislike of Mr S's outfit as a phenomenon that they can't quite believe and certainly can't all understand. From his parlousness as down-town Bradford, Sugar is primary about the necessary playing of his firm's share price, and incredulous of its being as low - even when the City reckons it's so high.

For sure, Amstrad presents the occasional City talisman to persuade the go-ahead gamblers of the Square. But that it really doesn't eat babies, but risks, drop nuclear bombs etc. Equally, Sugar has tried to raise his public image via appearing in the Department of Trade & Industry's Europe Open For Business campaign.

The effect is minimal. The City can't quite believe that the one man band Amstrad can continue being successful. The one man band himself can't quite believe that the City can get it as wrong as so often.

NEXT WEEK:

He should be so lucky

Just as Alan Sugar's Amstrad was about to launch itself as a computer company with the CPC, so the rest of the market was seriously set to follow. Back in April '84, Sinclair, Commodore, Atari and Atari were just months away from disasters which very nearly killed off all of them. The great computer adventure was just starting...

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The power of label

Peter Worlock probes the problems of incompatibility...

Why can't you take a program for the Commodore 64 and run it on an Amstrad CPC or a Spectrum, or an Amiga? After all (given the argument), you can play the same video tape in any make of video recorder, and you can play any music album on any make of hi-fi.

Life with a computer would certainly be simpler without these considerations of compatibility. But, by hook or by crook, the musicians, manufacturers and software houses are currently making things worse. How many Atari ST owners have bought a program, only to find it won't work with their new machine? In the PC world, owners of newer machines with 3 1/2" disks are having to shop carefully, since most software comes on 5 1/4" disks. More than a few Amiga owners must have bought King of Castles, then discovered you can't run it without two disk drives.

But the reasons why you can't use software on different makes of computer are purely technical, and fall into four categories.

Processors

The processor is the heart and brain, or the command centre, of a computer. It is physically constructed to carry out a relatively small number of instructions that do more more than move numbers from one place to memory, to another, or to do simple arithmetic with these numbers - usually adding and subtracting, but also multiplying and dividing on more advanced chips.

The first problem is that every different kind of processor only understands the few instructions it is built to understand, and every processor understands a different set of instructions.

This means that the 6502 chip in a Commodore 64 or BBC Micro cannot understand the instructions for a 280 chip in a Spectrum or Amstrad CPC.

Both the 6502 and 280 are 8-bit processors, that is, they handle information in chunks of eight bits, or one byte. Once you move up to the Atari ST and Commodore Amiga, there's another difference. These more recent processors are 32-bit chips - they handle information in chunks that are four times as large as those in 8-bit machines.

However, that only explains why you can't use 6502 programs on a 280-based machine, or on computers like the ST and Amiga which use the 68000 processor. It doesn't tell you why - since they share common processors - you can't use the same program on a Commodore 64 and BBC or on a Spectrum and an Amstrad PCW, or on an ST and Amiga.

The next level of difficulty lies in how the computer loads the program from tape or disk.

Storage

Computer designers, being only human, like to think they've come up with the best way of doing something. Of course, they share a lot of the same ideas; disk is better than tape for example, but how you make use of these different technologies is up for grabs.

So Commodore's designers decided that the best way of handling tape cassettes was to produce their own recorder, and build a special interface so that the computer could drive the recorder. This was slow but reliable, but it also meant you couldn't use an ordinary audio cassette player with the C64.

Other designers, on the other hand, decided it would be better if people could use their ordinary cassette players, so they built the Spectrum to that standard.

That's one reason why you can't even load information from a Commodore tape into a Spectrum, and vice versa.

Another reason is that the designers came up with different - and incompatible - ways of recording the information on tape.

When everybody made the switch to floppy disks, the same old problems came along too, one way or another. So when Apple designed a disk drive for the Macintosh, the designers had something very clever, by speeding up or slowing down the rate at which the disk spins, they got more information on each disk - 400K or 800K, rather than



• Considerations of compatibility

the 390K or 728K that ST and Amiga owners get off identical disks. But it means you can't read a Mac disk into an Amiga, or an ST, or anything else.

Everything is mutually exclusive.

But suppose you find a way to get a C84 program onto a BBC or an Amiga program into an ST. The instructions are in, and the processors understand the instructions. Why won't it work now?

Memory maps

We've already seen that processors are made to use glorified post offices, picking up numbers and waiting there in memory addresses. When you manage to load a program on one machine into another it's as if you had sent the mail to one town, Aberdeen, to its near-neighbor, Ullensaker. All of the addresses look the same and the post offices work in exactly the same way.

So when the Atari-style post arrives in Augsburg, the

post office doesn't notice anything wrong and starts juggling the mail to the appropriate addresses. Only then do the problems start because although the two towns look identical, the addresses are occupied by different people in Augsburg; the bank is in the High Street but in Atariville it isn't. The mail goes to the right address but it reaches the wrong people.

In our real computers, the addresses are identical. The 66000 processor in the Atari will send the instructions for the Amiga and start stuffing numbers in the right memory addresses but in the ST they have a different function. The result is that the computer crashes instantly.

In other computers the problem can be mitigated. For example the Commodore 64 has 64K of memory, or just over 65,000 memory locations. The BBC has just 32K of memory, so if you try to run a 64 program in a BBC, the chances are the processor will be trying to put numbers and addresses that don't even exist.

Special hardware

Finally, here's the problem, to its ultimate conclusion. Suppose you overcome the memory problem. Your program only uses instructions that are identical in both processors, and only addresses memory locations that exist and perform an identical function in both computers. Now why won't the program work?

Set it will. You've cracked it, all problems solved. Except one: your program won't do anything exciting. At best it might display ordinary text characters on the screen, but it certainly isn't going to produce dazzling graphics, or great music, or even paint out a letter.

As our demands for better software have increased, computers have had to become more complex. Faster processors, and more memory are only half of the story; machines like the Amiga use very powerful hardware to produce their sound and graphics. This special hardware has to map into the computer's memory, but it also requires special programming; indeed, the chips that produce the Amiga's graphics and sound are almost miniature computers in their own right.

This is the ultimate cause of incompatibility between different computers, and the reason why the comparison with video recorders, or hi-fi, isn't really fair. Yes, you can play the same video tape in different recorders but you only see the same movie. The instructions might be a little bit better, the sound a tad more clear, but it remains the same film.

With computers that isn't the case. When you run, say, Starblazer on your Spectrum, where you play a game that is vastly different to Starblazer on the ST. It's as though two different video recorders played different versions of the same movie: on one you get a cast of thousands, bombastful photography, and the full orchestra, on the other you get the three main characters, a factory, black and white screen, and a solitary lunge playing the scene.

What you lose in compatibility, you gain in product quality. ■

Centronics • Parallel Technobabble

A weekly assault on computer jargon

● After RS232 (see last week) the most common standard method for connecting your computer to other devices is the parallel printer interface.

● RS232 is a serial interface; it transmits information one bit after another, serially. As its name suggests, the parallel interface transmits bits of information together, side by side. Originally this made it faster, although it has been overtaken for speed by very fast serial interfaces.

● With RS232 there are a lot of variables - devices have to agree on how many bits of data make a single character, how errors will be notified,

how fast the data is moving, and so on. Parallel needs none of this, just plug in the cable and away you go.

● Or not. Because like all computer standards, parallelism is nothing of the kind. Perhaps worst of all, it's a genuine almost standard: 95 times out of 100 you can be confident that things will work as they should, but you can never be absolutely sure. There are some parallel printers that won't work with your Atari ST parallel printer port because the ST doesn't cut out enough power to drive the interface at the printer end. Similarly, some parallel printer cables won't work with the Amiga because the Amiga puts out voltage where the

cable doesn't expect it. The result is a dead cable.

● Furthermore, the industry likes to use Centronics and parallel as synonyms. They aren't. In fact, you rarely come across true Centronics interfaces any more, but if you do find a genuine Centronics printer, it almost certainly won't work with your Atari-style, parallel port. Ahem, there's no way to say that if you're a geek to plug everything together and hope nothing fails.

● As always, the only way to be sure is to trust that your dealer proves that a computer, a printer and a cable will work without problem - before you hand over your money.



The place for your questions and suggestions

Star choice

I am thinking of buying a Star LC-10 colour printer for my Amiga 5500, and need some help. Could you tell me what software the Star will work with (e.g. Workbench, Deluxe Paint) or will I need special software to use it.

Also could you tell me roughly how a printer works because I know nothing about these devices.

Simon Bailey, South Croydon, Surrey

• The Star is a very good choice, it's not only reasonably fast in draft and graphics modes, but it turns out a decent near-letter-quality (NLQ) typeface too. It's also very good value for money, officially priced at around £250, but you can find it for as little as £180 if you shop around.

For general use, the LC-10 will work with any and all of your Amiga software, in both text and graphics modes, since it can emulate both Epson and IBM standards. Even colour text is quite simple, since you only need to send a control code to the printer to switch colours.

However, colour graphics is not quite as straightforward. First of all, you need a suitable printer driver which allows you Amiga to control the LC-10's features. On your Workbench disk you'll find a variety of printer drivers - go into Preferences and select 'Change Printer' - and you can try several of these to see if they work.

Otherwise, you'll have to write your own driver. This isn't so much difficult as painstaking, but you should head all the information you need in the LC-10 manual.

The other point is that you shouldn't expect to be able to reproduce the entire Amiga colour set. You need something like a 1600 colour printer (LC-100) just to get 4,096 shades. The LC-10 uses a single multi-colour ribbon and by combining these various colours can't do just what you can build up a few dozen different shades. This should be enough to allow a screen dump of the Amiga's 32-colour mode, although

Absolute ST?

A few months ago I bought myself a second-hand Atari 520ST and the person who sold it to me said that it would run both old and new games without trouble.

Is this so, and what is the difference between the old and new languages used in these computers?

Do you think I should sell my old ST and buy a new one? J.G. Stokell, Seaham, Co. Durham

• On 16 new STs, Atari substituted a new version of the operat-

ing system ROM (the built-in program that controls the way the ST works). This is very slightly different to the ROMs on older

STs - including yours, Mr. Stokell - and will prevent some difficulties with software that bypasses the ROM routines. However, this works to your advantage. People who buy new STs will encounter more problems than owners of older machines, since all software is written to work with the older models. So you don't have to worry, if you have any doubts, simply get an assurance from your dealer that he will exchange any programs that don't work properly.



• The Atari ST - which version have you got?

ing system ROM (the built-in program that controls the way the ST works). This is very slightly different to the ROMs on older

you want get an exact colour match.

Finally, a general discussion of how printer work would take up far more space than we've got room for here, but watch our Learning Curve section for beginners - you'll find an introduction to printer technology in the next few weeks.

switches changing to the appropriate mode to function with the monitor?

Third, the main reason for buying a multisynch monitor now is to allow for future upgrading. Would a VGA card in an expansion slot with the Amstrad EGA disabled allow VGA graphics on a multisynch monitor?

Roger Colbeck, Pinner, Middlesex

• Technically, you can do most of what you suggest. However, I'd strongly recommend that you arrange ship now.

There are a number of reasons. Video out ports generally put out a composite video signal which degrades the image, and you certainly wouldn't be getting an EGA-quality display. You'd have to find some way of hooking up your Amstrad's video interface to your multisynch monitor. Later, when you switch to VGA, you have to disable the internal EGA controller, and that probably means cutting tracks on the circuit board, and I suspect that's not something you'd be comfortable with.

All things considered, you'd be better off abandoning the 1640 now. You can probably get a decent price for it on the second-hand market, and that will get you most of the way towards a genuinely expandable PC-compatible.

If you really think you'll want VGA some time soon, have a close look at the Amstrad PC2095, which has VGA as standard but doesn't lock you in 16 your first

The second part of your question, I assure, is about the newer version of Basic which is supplied with the ST. In this case, the change works against you. The original Basic supplied with older STs was a real dog, and Atari only got around to fixing some of the worst problems when it released the newer version free with new STs.

To answer your final question: no, there's no need to get rid of your existing ST, but if you want to program in Basic you'd be well-served to buy a product like GFA Basic or one of the variants of Microsoft Power Basic, rather than try to use the free Atari Basic, which you should have got with

monitor the way the 1512n and 1640n do.

Program for

SUCCESS

I am a small-time game programmer who wants to expand into the mainstream of commercial programming. Therefore, I wish to acquire a PDS system, which will add me as and in my work.

What would it cost for a £502 system, and where do I get one?

Nigel Smith, Handsworth, Birmingham

• The Programmer's Development System, for those who missed the original article (Express 101) is a professional assembler/monitor/debugger/graphics editor which runs on a PC-compatible and cross-assembles for 286 or £502-based computers.

In other words, you do all your programming work on the PC, but produce programs that run on Spectrums, or Amstrads, or Commodors, or just about any 8-bit computer.

The system consists of an interface board that plugs into a standard PC expansion slot, the software, and an interface for the target computer. The PC system costs £500, and the target machine interfaces are £50 each.

PDS is available from PD Systems on 01-640 1130.

Standard problem

Thanks for your article on PC graphics adapters (Express #1), but I'm not sure you answered my particular question because I have an Amstrad 1640 with mono monitor.

First, if I get hold of a 150-watt power supply to power the system unit, can I use any multisynch monitor such as the NEC II or a Samsung CM4551 plugged into the video out port?

Second, will it just need the DIP

Advanced Amiga Basic book offers any satisfactory solution, let alone the IBM Basic manual. How is it done?

Edwin Le Marquand, St Lawrence, Jersey

• You're right - there is no direct equivalent in Amiga Basic. Instead, the Amiga has a system variable called TIMES which holds the time as set from the Workbench when you first switch on the computer.

This is a 24-hour clock format, so that at a little after five past six in the evening, PRINT TIMES would produce 18:05:10.

In the formal Moments mode. Unfortunately, there's no way of setting TIMES to zero from Basic, so you have to do some rather complex manipulation.

The following program shows one way of doing it. I have converted hours and minutes to seconds to avoid having to calculate the mathematical carry when the second and minute counters click to zero.

```

Main
CALL GetTime (t)
start = t
'end of program
open here
CALL GetTime (t)
STATIC
h = VAL(RPTTIME$) / 24
m = VAL(RPTTIME$) / 60
s = VAL(RPTTIME$) / 60
' s = 0 THEN h = h + 1
m = m - 1
' m = 0 THEN h = h + 1
END SUB

```

'perform timer sub program
start = start time in seconds

'get hours
'get minutes
'get seconds
'convert hours to minutes
'convert total minutes to seconds
's = time in seconds

```

SUB ConvertSec (hours%, mins%, secs%) STATIC
hours% = elapsed / 3600
elapsed = elapsed MOD 3600
mins% = elapsed / 60
secs% = elapsed MOD 60
END SUB

```

Amiga timing troubles

As a 67-year-old pensioner who has found the last five years inaugurated by computers and programming, I welcome the arrival of your magazine. However, may I be one of the first to ask for help.

I need to program a timing sequence on my Amiga in Basic. On the CL18 this is simplicity:

```

10  TIS = "0000000"
' rest of program
100 PRINT "Time taken was ";
110 PRINT MID$(TIS,2,2); "mins ";
120 PRINT MID$(TIS,5,2); "secs"

```

Nothing so simple and straightforward is possible with the Amiga and in spite of trying many different approaches, I can find no way of producing the equivalent in Amiga Basic.

What is even more frustrating is that not even the

VP Planner *plus*

version 2

"I can't really see why anyone would buy Lotus 1-2-3 instead of the cheaper, compatible, more powerful and versatile VP-Planner Plus"

Amstrad Professional Computing, September 1988

Nor can we. Can you?

Comparison of VP-Planner Plus version 2, 1-2-3[®] rel 2.01 and Quattro[®]

Features	VP-Planner +	1-2-3	Quattro
Worksheet size	800x256	819x256	819x256
Number of disks/installation required	2/discs	4/discs	4/discs
2 line audio pop-up menu (mouse) systems	YES	NO	NO
Underfile commands, Entries, macros	YES	NO	NO
Transparent macro files	YES	NO	1000.4
Background priority recalculation	YES	NO	NO
Fast recalculation	FASTEST	no	3.6 sec
Active window for add-in programs	YES	NO	NO
Test status	YES	NO	NO
Report generator	YES	NO	NO
Line and box drawing	YES	NO	NO
Data input commands	YES	NO	NO
Multi-dimensional database files	YES	NO	NO
CRASH file retrieval by field & record	YES	NO	NO
Subwindow print	YES	NO	NO
Background print	YES	NO	NO
Autosave	YES	NO	1000.4
Range column width commands	YES	NO	NO
4 width command (4 d's)	YES	NO	NO
Up to 8 windows on a worksheet	YES	NO	NO
Print graphs from worksheet	YES	NO	1000.4
Number of user directly executable macros	400	20	400
Macro leave mode	YES	1000.4	YES
Rich worded macros	YES	1000.4	YES
Macro debugging (single mode)	YES	YES	YES
Mathematical functions	20	20	20
Logical functions	8	8	8
Financial functions	11	11	11
Statistical functions	16	16	16
Database functions	10	10	10
String functions	17	17	17
Other functions	14	14	14
Total functions	100	88	88
CGA, CGA, Hercules supported	YES	YES	YES
VGA, VGA video support	YES	NO	yes only
Spread sheets			
Addition large	0.02	0.00	*
Addition small	0.20	1.00	2.25
Division large	0.02	0.00	*
Division small	0.20	1.00	2.25
Exponent large	0.02	0.00	*
Exponent small	0.20	1.00	2.25
Multiply large	0.02	0.00	*
Multiply small	0.20	1.00	2.25

All times in hundredths of a second. Large and small versions of four across three worksheets were used. Large models require more than 75 rows and 75 columns, small models require 75 rows and 25 columns. Tests were conducted on an AT clone at 386MHz and on co-processor. *Quattro could not load large models with 1000.4 files after 2000. Lotus 1-2-3 always the values compare to the nearest second only. VP-Planner Plus runs on IBM PCs and compatibles with 286 or more RAM.

"VP-Planner Plus is a magnificent program and arguably the best spreadsheet on the market today" - PC Plus, February 1988

"More sense than money" - PC User March, 1988

These accolades were based on version one of VP-Planner Plus. Version 2 has now gone even further, and faster!

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TransM: Microsoft for C64 £19.95cd + Atari
XK/76 £19.95cd + Apple II £24.95cd + PC
£24.95cd + Atari ST £24.95cd + Amiga £24.95cd
(not all games available on all formats)



The Ultima series is one of the most successful computer role-playing games, and is now available on every computer that has sold in reasonable numbers in the US (unfortunately, that rules out the Spectrum and Amstrad CPCs). Distributed by Microprose in Britain, the fifth Ultima episode has just been released.

All of the games are set against a common background which eventually develops into the kingdom of Britannia – and since this is a fairly role-playing game, Britannia's problems are largely of the 'malicious wizard and sorcery' variety.

The first three outings are fairly routine monster-bashing operations, though of a high standard, sometime

less. Ultima IV, however, broke new ground with Quest of the Avatar, a cosmic consciousness-lasing trip in the spirit of Galad and the Search for the Holy Grail.

The graphics are less than brilliant, consisting of key characters wading over a 2D map, but the size of each game, the magic and combat systems, and the wealth of background detail make them really good your imagination working.



Ultima series

TransM: USA for C64 £13.95cd + 4.95cd + Amiga
£24.95cd + PC £29.95cd + Atari ST £24.95cd



Certainly the one to watch, this isSSI's opening shot in a series of games based on the grand-daddy of role-playing, Advanced Dungeons & Dragons. SSI claims it sticks to the rules of AD & D

putting six characters under your control, computer-controlled wandering characters and what must be the most sophisticated magic and combat system in gaming.

The storyline of the first episode is the familiar 'city in mortal terror', but SSI is promising that everything else will be strictly above average, with 3D perspective graphics, close-up portraits of characters and monsters, and loads of other good things.



Pool of Radiance

TransM: USA for C64 £14.95cd + Amiga
£24.95cd + Atari ST £24.95cd + PC £24.95cd
(not all games available on all formats)

The biggest failing of the Ultima series was the scrolling 2D map that presented your main view of your characters' progress. Electronic Arts' Bard's Tale remedies that with a genuine 'cut the eyeball' view of your surroundings.

The first game of the series is set in the troubled city of Skara Brae and you guide a party of six adventurers around the streets, dungeons and castles as they learn their trades of fighter, bard, thief and magic user.

There's a veritable 'cast of thousands' by way of monsters and enemy fighters, as well as a series of ever more powerful 'tournaments' of cut before the final confrontation with head baddie Manger.

Well, not so final, because Bard's Tale II is now out on C64 and Amiga, and the third instalment of



the saga has just been released for the 64. The good news is that you can use your original party in the subsequent games, so you really do get carried with their well-being.

Bard's Tale can lay a strong claim to being the definitive fantasy role-playing game to date (although the joint US Gold/SSI venture with Advanced Dungeons & Dragons might challenge that). It may not have the graphic excellence of Microprose's Dungeon Master, but it more than compensates with an enormous challenge that will have you playing for months, if not years.



The Bard's Tale

GAMES
THAT
TAKE
OVER
YOUR
LIFE

There are arcade games, like *Arkanoïd*, *Spindizzy* and *Tridion*, that have the joystick jacks in glass-eyed housings. There are the cunningly plotted adventure games, like the *Zork* trilogy, *Quest of Thieves*, and *Edith-Hunter's Guide*, that leave players mumbling in their sleep. Classics of

But there are a select few games that go beyond mere entertainment, the games that threaten to submerge your own personality beneath that in your electronic alter ego. They are the games that lose some months of your life as your heroic counterpart learns and grows—and more than you'd like, dies.

What are the factors that combine to create these special games? First, the hero or heroine must have an identity that you can believe in. A persona that you, the player, can assume. Which immediately rules out all the arcade games—you can't make much of an emotional attachment with a bunch of pixels, no matter how beautifully drawn.

Second, the character must develop as the game progresses, through the acquisition of new skills or powers, or discovering new information. This qualification, for example, rules out an otherwise excellent product like *Microprose's Gunship*, which fills the first requirement. But *Gunship* never, no story, no first and last place or merit. Not for goals, and that's it's simply a question of how well you can accomplish your mission.

Third, and perhaps most important, the story must go on and on, the longer the better. There may be a definitive ending to the story—say destruction of some mighty opponent, the award of some ultimate accolade, but you'll be a long time getting there.

Finally, even if it's the journey, not the arrival, that makes these games so enjoyable, the striving against monstrous odds, the application of skill, the triumph of courage and daring, and the use of superior intellect.

Somewhere down the line, in the not-too-distant future, the descendants of these games will be the electronic entertainment of their day. When the science-fiction dream of direct sensory stimulation takes over from humble displayed graphics and sound effects, these games will offer the ultimate entertainment: the chance to shrug off your real life and jack into a more exciting universe. And who knows, perhaps some players will prefer not to jack out again.

In the meantime, here is the New Computer Express list of present day Science Dreams.

WHAT A LOT OF ROBBERS

You disagree with the titles selected on this page? Then why not tell us what's kept you glued to the screen for months on end.

Write to: Addition Corner, New Computer Express, 4 Green St, Bath BA1 1EL.

Elite

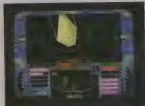
Probably the best, and still one of the best, other readers, *Elite* fulfills all the given qualifications. Basically a space trading game, what sets *Elite* above the competition is the open-ended plot—while your goal is to receive the ultimate accolade of *Elite* pilot, how you get there is up to you. You can be a hard-working trader, out for life on the edge as a beauty hunter, or try the less-laundered but more dangerous route of trading drugs, guns and slaves.



The gameplay is spiced up by the introduction of several missions outside the normal run of play—two casually completing these helps enormously in your quest. Coupled with the nicely devised story is large element of 3D shoot 'em up with fast-moving wireframe graphics built into the PC version.

As your skill—in both trading and fighting—improves, so do the rewards with more powerful weapons, more potent defenses, and extra cargo capacity. After months of play, you have a great deal invested in your character.

From Firebird for Spectrum £14.95cs • CML £14.95cs £17.95cs • Amstrad £12.95cs £14.95cs • PC £24.95cs • £27.95cs • IBM Superior Software for BBC £12.95cs £14.95cs



Alternate Reality

From Firebird for Spectrum £14.95cs • Amstrad £14.95cs • IBM £14.95cs • PC £14.95cs • Apple £14.95cs

As the title suggests, this offering from Outpost takes players to the fifth degree, in what other fantasy game might you get a job washing dishes in the local tavern, or choose between beef sandwiches and rabbit both from the menu.

Another long-playing series, the opening episode sets you down in the city of Nebel's Dharma, stark naked, shamed and with a severe cashflow crisis. So



you need a job, clothes, and weapons if you're going to survive. Let alone establish your heroic credentials.

The second installment, *The Gunglins*, is where you get down to serious monster slaying, and further action modules are promised. This game, then, is truly an alternate reality.

Unfortunately, the game doesn't quite live up to the promise: the graphics are fine in the style of *Bard's Tale* but there's no animation, and lots of disk accessing slow down the gameplay to barely tolerable levels on the E4 version.

However, the IBM implementation is fine, and if you want a game that could occupy the rest of your life, this is the one.



Starflight

From Firebird for Spectrum £14.95cs • CML £14.95cs • Amstrad £12.95cs • IBM £14.95cs • PC £24.95cs • £27.95cs • Apple £14.95cs



One for PC owners only, and for that reason it rarely figures in discussions of the great games. But make no mistake, *Starflight* is a classic.

It begins in a more-or-less routine trading game but quickly develops into a massive odyssey of interstellar exploration and detection.

You load a crew of six aboard your starship, mining for minerals, collecting exotic lifeforms and historical artefacts with the aim of earning money to develop your ship. This is no trivial task because there are literally hundreds of planets, all completely mapped.

But its success becomes apparent that there is a more pressing task to discover the story of the mysterious Ancients, and uncover the cause of a star-

bursting force which is gradually making all planets in the galaxy uninhabitable.

There are other intelligent races in the game, and to succeed you'll have to fight with some, but talk to them. They give you the necessary hints and clues to complete the game. *Starflight* uses the PC's low-colour bytes display mode, so the graphics aren't brilliant, but there are some wonderful effects and the storyline, and excellent gameplay more than make up for that.



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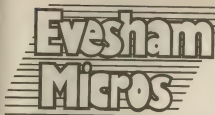
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MONO	414.78	576.78	554.78	678.78	678.78	678.78	678.78	678.78
1580	468.00	681.00	681.00	778.00	778.00	778.00	778.00	778.00
COLOR	514.78	714.78	714.78	814.78	814.78	814.78	814.78	814.78
1580	568.00	821.00	821.00	921.00	921.00	921.00	921.00	921.00
EGA (1600)	644.25	844.25	844.25	944.25	944.25	944.25	944.25	944.25
1580	698.00	898.00	898.00	998.00	998.00	998.00	998.00	998.00
MONO	578.00	658.00	658.00	738.00	738.00	738.00	738.00	738.00
1580	628.00	708.00	708.00	788.00	788.00	788.00	788.00	788.00
EGA (1600)	678.00	758.00	758.00	838.00	838.00	838.00	838.00	838.00
1580	728.00	808.00	808.00	888.00	888.00	888.00	888.00	888.00
MONO	578.00	658.00	658.00	738.00	738.00	738.00	738.00	738.00
1580	628.00	708.00	708.00	788.00	788.00	788.00	788.00	788.00
EGA (1600)	678.00	758.00	758.00	838.00	838.00	838.00	838.00	838.00
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SPEX

The pitching and rolling road

Anticruz/Michigan, or whatever they're calling themselves this week, surely deserves an award for being the most ambitious with their latest effort.

Ad-stounding!

In writing this week's column in a state of shock, when switching the relay on to catch up with events in Brookside Close, I found myself watching an advert for the +3. Do my eyes deceive me or is Baron Sugar really starting to push a computer with the Sinclair tag on it?

For those who don't catch quality programmes, the advert basically features a comedy-looking teenager playing around and totally unimpressive games on his +3. It included several close-ups of the disc drive and phrases like 'advanced Sinclair Technology' and the claim: 'at £199 even I can afford to save the Earth'. Well, computer ads never have been known for their quality. Remember Commodore's elegant advert? No either.

First, they accuse the disposable ad manager to commit the numerous misdeeds of another stunner: *Advertising* (no 16), and successfully too, if the definitive New Computer Express review is anything to go by. Not as if just an ad itself, they are now conducting conversions of Quality First, broadly *Advertising* in space, which leads us... and the hydraulic hand as those you would now see.

There have to be said with 16M 58 in the time it takes to set, but in the meantime you could always have a go at instructing your new one with hydraulically-controlled motion using 3 walking up liquid topics and break accounts of rocky-baby plastic.

Smiths pull out

Ever since the Z801 was released and people the world over got to grips with RAM pack modules, I have been a fanatical fan of the RAM module. There's nothing else I love more than a little suspended to hold Smiths have decided to drop the +3 and +3 from their shelves, apparently because of poor sales. At Anticruz prices the act surprised. The computer that will be replacing our beloved *Spacely* in the ST Amp?



• The Spectrum +3 - disappearing, with the +2, from Smiths...

Pootie frolics

Here are a few more sightings for the extensive range of football games on the Spectrum. Origin

only planned for release by Pootie before they finished. Pootie's next that happens this year. Boy of the future is the game of the comic strip.

In up to Boy to save the day once again as this time the Molebroom charity 5 a side match has been interrupted. To find them, Boy has to solve a number of puzzles using his charm and cunning to survive. I think you get the idea.

During hopefully necessary Boy's escapades you can take time to play the football playing part. It's two-side, very convenient for the programme's usability and the blacky black set video graphics can hardly be said to reduce the fun and not yellow strip of the comic-based Molebroom events.

Much better and almost worth printing that picture for in issue 1 of 4. 80000 Simulators (see Code Masters). This was pretty well over and (it's the last issue, but my editor has lights) about to come out. It's a good early-stage about the graphics. Before that the second London and London (see) but not a push on Molebroom Part 2 and for experience, it would have you as well as a picture but hardly over the moon with it.

And now for something completely different...

The Computer Monitor Diary 1989 from Spectrum is a product which really needs to be advertised under the slogan: for the computer user who has everything.

It's a decidedly all-but-computered disk with most of the features listed in the paper counterpart, like: horoscopes, calendars and birthdays. There are also trivia games, hangman, number bonkers and birthdays. Probably the most useful feature is the Multi-Site Software System. (MSRSS) simply says the age and memory of your and your given a 'looking over' feature, just what I've always wanted.

Shurken points

Last May I set a simple one you've managed to get to grips with the world's most useful. Here are some handy-prepare tips for level one.

- the best examined lighting method is to keep looking and then occasionally pause.
- don't be too brave. It's often better to run around the enemy rather than use some of that all-important life force.
- select a map and the objects you need will show when you enter a location.
- guards in pairs on the wall to open a trapdoor on the first screen.
- the key opens the gate in the park.
- weapons just waiting in 80 points up include the staff, lying with marks on top of a wall, a maulstick, split in two parts, a set of the heaviest, and throwing your best as held in the (see picture) are located in a box in the park. Watch out for police liability.

Speak up!

New Computer Express's photo: extensive computer 1601 actually been flooded with your mail.

Take this as an opportunity to let me know if there's anything, or if the 1601, sources and points of view. I'm sure you and your are especially welcome. The fact is, I don't get much time to play anything thoroughly enough for really in-depth material. Features and independent software will get just in much coverage as their glory counterparts providing they are good enough to come on your Spectrum, get writing - you'll make it all.

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John Alway

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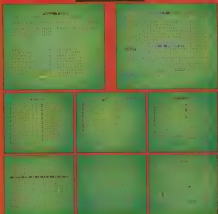
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GAMES



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MACHINE-SPECIFICS



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Try typing:

POKE 40922,345 (This will keep the screen from moving off the data between 100-345)

POKE 40912,133 (This will allow the program from loading the data and allow you to move the screen forward using the "Y" manual display)

POKE 40902,255 (This will give you the normal display screen)

POKE 40915,56 (This will give you the screen for the picture display)

Save tips...

Insert your manual at the end. Problem game and the cassette deck and follow the guide.

Level 1

Save your computer (if you can, but don't). Name it if you have it up.

Poke 32000,44 - gives you boots of energy

Poke 20002,44 - gives you coats of love

SVS 10000 - to restart the game on level 1

Level 2

SVS 10000 - to restart the game on level 2

Level 3

The password is PGRSCH. After that:

Poke 25002,44

Poke 30000,36

Poke 25000,120

Poke 30000,100

Start for infinite energy while you get these.

Turn tips

SVS 10000 - to restart the game on level 3

...and for Pacmania too

For infinite Pac-man eat, enter the code below:

Poke 20002,100

SVS 10000 - to start the game

New releases

Master Blaster • Zappin • £1.99

Master Blaster is similar to the arcade game. It's a 100% new game with many new features.

Now, let's continue to make an US Gold release. Thunderbolt is a 3D first person shooter. The programmer behind the game is Chris Butler, creator of master piece, the Doctor and Golden Orb. Thunderbolt is a 3D first person shooter. The programmer behind the game is Chris Butler, creator of master piece, the Doctor and Golden Orb. Thunderbolt is a 3D first person shooter. The programmer behind the game is Chris Butler, creator of master piece, the Doctor and Golden Orb.

Listings

This week's offering is one of those releases which is very interesting to the 48K side. The reason the machine was not built to do such a task. The reason below is doing a quick work. The chip making it to give the display area. If possible. This effort has been used a lot in 700 series.

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Public Domain

Here's a program worth getting hold of - a public domain game called Heller. It's a 100% new game with many new features. The reason the machine was not built to do such a task. The reason below is doing a quick work. The chip making it to give the display area. If possible. This effort has been used a lot in 700 series.

This masterpiece can be found on CompuServe by going to Beta Design directory at "VILLAGE". But if you're not a CompuServe member, I'm sure that this masterpiece will soon be in a public domain library.

Well, we are on a different note, with the release of Double Dragon by Midway. However, the game was released by Midway. However, the game was released by Midway. However, the game was released by Midway.

There's all for this week - remember, you only have 7 days to want and need a result before the next issue.

Les & Bill



Flipping marvellous

Schizophrenia gives a bad press generally but the computer version Flipper gives you the appropriate level of split personality. By upgrading your Z8016 memory you can follow you out the PCW in one half and Loadstar 2 for another PCW prog in another. Flipping across in a couple of seconds (flips) now it reads into all programs except for those (like an upgraded version) programmed for some time in February will do.

Though obviously priced in CMBs, Flipper is as available too and really is like having an extra PCW. The best thing will be the ability to flip out of those using a Main Office spreadsheet showing your budget expenditures when the production manager drives. Details from Software Information on 0430 888333.

Corruption on disk

A world of legends, accessible across, beautiful, young people with seductive robes, be removed from reality - yes, it's like the City. Now Rainbow have brought out an adventure for the PCW based on notable happenings in the



financial world, such as mortgage, planning of budget, number dealing etc. A graphics plus text adventure. Corruption works really well on the PCW, the sort of adventure even best experienced will get hooked on. Will you get there before they get you? Will your integrity remain intact? I just can't. Corruption is £24.95 from Rainbow on 05 240 8888.

The gift of speech

In Japan you can get master clocks which make you up with a noisy Japanese woman's voice saying 'It is now time to get up and go to work. Please stop me by automatically making up to it now since to get up, etc. etc. Obviously enough it has never been a great export but

Amaze your friends

How to get rid of CPW boxes who show their PCW as parties: type at the **Alt** prompt [X] followed by **E** then [RETURN]. The display becomes an eye drop, more cramping to work in than a PC, an Apple Macintosh's pulpy screen, even a Z88. You can restore it by typing [X] or [X] (RETURN), but you don't have to let them that.

Could it happen here? Well, yes it can, even on your Amstrad 586 Engineering are working on a speech synthesizer module which will work on your PCW. Now your BASIC programs can actually speak to the user, report error messages quickly and give a very interesting laugh when the message 'Data error on track 6 sector 1 - Henry Ickle in Control' appears. Somehow also stored - particularly for the disabled - but even for those of one who speak too much already there are no doubt places of vision applications. Details from SM on 022 764262.

Rob Atkinson



Cometh the hour...

That Peter of Glaston has finally succumbed to pressure from users and will - with any luck - be demonstrating a VHS10 emulator within a few circumstances software in the ZX Microstar next January (December 1990).

This new feature will improve things for those who use services such as IT Old and can also take advantage of the improved screen handling and box graphics.

Now whilst it's quite likely a logical extension to the package, as 386 hardware has been a long time coming. These things take time obviously enough. They have been delayed only on every appearance at a show or event to include this and may finally be glad to see the back of it. Let's hope it's worth the wait.

Late year line-up

Just five days before Christmas, PQWL will be releasing a new batch of products for the QL and the Thor whilst we're at it.

Writing in at 034 or 8444

C-Port, which enables you to convert your SuperBASIC programs to C. However, it can be compiled on the QL or banged over to a PC or whatever.

At the bottom end comes TextFile, a useful package for a writer which converts (and lists) as ASCII text. Easy ready for downloading or use in the Editor.

Last in the late year line-up is Hardback & Funder in C25. PQWL notes that the first provides a 'searchable indexing enquiry tool' which takes you through the directory/directory structure. Funder covers out those past forgotten files based in sub-sub-directory depths.

PQWL can be reached on 021 260 2113.

Paul Connell

Chipping in price rises

D-Ram chip shortages have hit the whole industry throughout the year, with the likes of Amstrad and Atari bowing their tails.

And now, just as some of the bigger players are beginning to see some light at the end of the tunnel, so comes news of the effect on the QL market. And it's a question of needing to move very fast if you don't want to get caught out.

Essentially, the suppliers of QL expansion boards have been placed in a quandary with the continuing chip shortages. There are now numbers of some vicious price hikes in the offing. Few are as yet in a position to say how much prices will be increasing, but there is not much doubt that rises will indeed have to occur.

Why this will be happening is easy to explain. The boards they are selling consist almost solely of chips. Considering that the suppliers are up against all-comers - many of them seriously large concerns - I suspect they have a point.

One effect is that it will make the second-hand market look very interesting indeed. Those looking for a bargain will have to move very fast. You have been warned.



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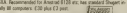
ASPEC 3000 switch mode type. Output is +5V 3.5A, +12V 1.5A, -5V 1.5A, & very compact (only 6.5" long x 4" wide x 2" thick) capable of powering floppy drives. The normal retail price of this is around £20 but as usual we offer at a bargain price, namely £10. Plus £1 post. Ref 10934.



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Further details from Phil Borman, 15 Grosvenor Crescent, Grimsby, South Humberside, DN2 0QL. Tel: 0472 48650.

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PSsst!

A last look at the
computer scene by
cynical old hack, Private I

Mad Max and the Dame

It's not true. Robert Maxwell hasn't bought us. It hasn't happened, it won't happen and there's no reason for it to happen. We're very happy where we are, thank you," said the dame from Teleconsort.

You heard the lady. I'd been told that the contract was out for Teleconsort and that Big Robert and

da boys were the ones gunning for it. It could be my big break. Mad Max flashes his monster choppers and the Telecom crew bite the bullet. But no. The Queen Bee Paula Byrne says not. She's happy being with the upstart mob at Telecom.

So I call my contacts. "Hey, who's the bigshot with the Telecom contract? Just

give me a break. Just give me a name. I need the story."

The trail went to Virgin. Branson's crowd took bag. They took out the east-side gang Moxteronic just the other week. Maybe they now got the hots for Telecom. But my man says no comment. No comment? Whaddya mean with your no comment? I need that like a need a hole in the head.

Things were looking desperate - like a great gap on page two type desperate. Who'll give me the bag? I call the

biggest name in contract software - he'll know. Tell me, just tell me. So he begins, and I feel the rush of blood like I never felt since I heard how Big M did for Cambridge GIVE. Makes your blood run colder than smushed ice-cubes. The guy sure knows his stuff - but the guy knows

nothing about the Telecom heist. Maybe he's the one gunning for them. But I got no takers on that one.

So it's back to Mad Max. I nail one of his men and hit him hard. You've taken out Telecom, right? Wrong. 24 cards away. He sure runs a neat operation. All trails lead to Big Robert, but all trails go dead. I just don't stick up. Someone's gotta squeal.

Maybe it's the Lady Paula. Maybe she's planning an inside job to buy herself out of Corporate Hellmouth.

Well it's the bag, too again. Everything means less than zero. I'm on a one way ticket to the Machine Specifiers. If I can't get this one to stand up.

So I gotta go with Max. He's the man. He's buying Teleconsort and you read it here first. ●



• Robert "Mad Max" Maxwell: Are you for sale?



• Paula "Be Dame" Byrne: No

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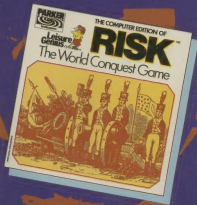
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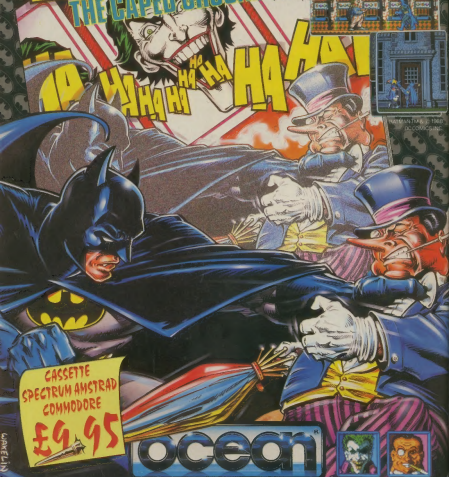
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